

**A STUDY TO ASSESS NEEDED IMPROVEMENTS AND BARRIERS
IN PLANNING AND DELIVERING AGRICULTURAL EXTENSION
ACTIVITIES IN THE KURDISTAN REGION OF IRAQ**

A Thesis

by

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ABSTRACT

The purpose of this study was to assess planning and delivering agricultural extension activities in the Kurdistan region of Iraq for future program implementation. The study was a descriptive research and used a modified Delphi technique to identify needed improvements and highlight barriers in planning and delivering extension activities by the willingness of extension workers. The population of the study was 50 MOAWR purposely selected government employees consisted of 10 extension experts, 15 extension administrators, and 25 extension agents. The study used three rounds web-based survey questionnaires.

In Round I, the panelists were responded to two open ended questions to identify needed improvements and barriers in planning and delivering extension activities. The gathered information from Round I was examined, organized, and combined to create the second questionnaire for Round II. In Round II, the panelists were indicated their levels of agreement or disagreement about each needed improvement and barrier. The study employed a six-Likert scale with 1="Strongly Agree", 2="Agree", 3="Somewhat Agree", 4="Somewhat Disagree", 5="Disagree", and 6="Strongly Disagree". The needed improvements and barriers that received two-thirds of agreement (numbers 1 and 2 in the six-point Likert scale) were used to create the third questionnaire for Round III. In Round III, panelists were developed consensus by rating the statements that received two-third agreement in Round II. Equally, the same Round II six-point Likert scale was used in Round III.

The result findings of the study were revealed to the demands of extension policy implementation in the region. The results of the study were summarized in three overall implementation theme areas: community based program development, building capacity program, and institutional structuring and three distinct research areas: leadership in extension, personal traits of extension agents, and external communication. Furthermore, the results of the study provided key points and details for each implementation theme and distinct research area.

DEDICATION

I dedicate this thesis work is lovingly dedicated to my family, especially, my parents who supported me each step of the way, to my subject teacher who always guided me, to my friends who helped me finished this project, and most of all to the Almighty Allah who gives me strength and good health while doing this.

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NOMENCLATURE

ACDI/VOCA	Agricultural Cooperative Development International and Volunteers in Overseas Cooperative Assistance
GDORE	General Directorate of Research and Extension
GIBRC	Geopolitics and International Boundaries Research Center
IAER	Iraqi Agricultural Extension Revitalization Program
IRB	Institutional Review Board
KRG	Kurdistan Region Government
MOAWR	Ministry of Agricultural and Water Resources
MOP	Ministry of Planning
NGO	Non-Government Organizations
OFFP	Oil-for-Food Program
RAND	Research and Development
USAID	United States Agency for International Development

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CHAPTER I

INTRODUCTION

1.1 Preface

The Kurdistan region is generally considered to include the governorates of Erbil, Sulaimani, Duhok, and Garmean area. It is located in the north of Iraq and famous for its rich agricultural and natural resources (Ministry of Planning [MOP], 2012). From the antiquity, Iraq known as the birthplace of agriculture and Kurdistan area is a potential place for agricultural production from Northern Babylonia dates to the Achaemenid period during 404–358 BCE, as described by Herodotus (Dzięgiel, 1981, p. 9; O'Shea, 2004, p. 1).

Kurdistan's economy has traditionally and historically been based on agriculture (O'Shea, 2004, p. 51). It is known that much of the agricultural production is exported to the neighboring countries in the late nineteenth and early twentieth century (Ministry of Agricultural & Water Resources [MOAWR], 2012). The main farming activities in the area are based on animal husbandry (sheep, goats, and cattle), sparse cereal production (wheat, barley, Chickpea, and lentil), and cash crops such as tobacco (O'Shea, 2004, p. 51). Experts in the Ministry of Agricultural and Water Resources (MOAWR) believe that the region could become a source for organic products as well (McCarthy, Anderson, Joyce, & Kent, 2008).

From the aspect of physical geography, the area is located Southwest of Africa, between latitudes 34-37 and longitudes 41-46. It is bordered by Syria to the west, Turkey

to the north, and Iran to the east. The region's climate is similar to the Mediterranean with rainy and cold winters and dry and hot summers, except the mountain region that remains moderate in summer (MOP, 2012). This particular climate makes the climate's region to be more Northern moderate that is considered continental and semi-tropical, which it helped to create a rich flora in the area consisting of "transitional type, with a mixture of Mediterranean and steppe or desert plants." (Dzięgiel, 1981, p. 10). This particular climate makes agricultural activities to have a high sensitivity to the natural and the seasonal weather that played an essential role in determining the level of production and yields, and moving people from a place to another place during different times in a year (MOP, 2012). However, very few Kurds are nomads from the whole population; many of the tribes were semi-nomadic in the Past. For instance, in the eighteenth and nineteenth centuries at least half of the Kurds were nomadic and stayed in their villages during winter practicing their agricultural activities and took their flocks to pastures during summer (Dzięgiel, 1981, p. 36; O'Shea, 2004, p. 51).

1.2 History Background

From the ancient history, one powerful unifying myth to the people in the Kurdistan region is lived in harmony with agriculture plenty and nature landscapes (O'Shea, 2004, p. 51). Ely Bannister Soane (1881-1923) pictured agriculture on his journey to Sulaimani as; "water and trees were abundant, valley after valley was carpeted with flowers and deep in grass. Sheep and cattle grazed in every place, guarded by small boys and girls." (Soane, 1912, p. 175). In "Chermu" or "Jarmo" village, which

is located in the south of Sulaimani, remains of wheat and barley cultivation were found that go back more than 10,000 years, and, in the Kurdistan region, the “Guti” ,the ancestor of today’s people in Iraq, established the first village-based agricultural garden 11,000 years ago in northern Babylon (Renfrew, 2006).

In the past, agriculture was the backbone of the area’s economy, and provided the markets of Mesopotamia, Syria, Turkey, the Transcaucasia, and Iran with agricultural products for centuries (Dzięgiel, 1981. p. 36; Weiss, *et al.*, 1993). In the Zagros area, one of the most famous mountains in the Kurdistan region, food production was found in around 8000BC (Renfrew, 2006).

Back to the late eighteen and early nineteen century, O’Shea (2004) explains food production in the area and how people depended on agriculture for their daily lives.

Many everyday food-related activities of village people are revered by Kurds, frequently practiced in homes in the urban setting and often exported to foreign lands as symbols of Kurdish identity. Examples include: the making of flat griddle bread (nan saji): butter churning, providing both Kurdish butter and the national drink, buttermilk (dow): yogurt and cheese making (mast, panir). All these food stuffs, the fruits of subsistence farming, and their means of production, are considered to be somehow inherently Kurdish. They appear in proverbs and expressions, are often ostentatiously favored richer fare, and are considered to be more delicious in Kurdistan than elsewhere (p. 158-159).

These evidences show that agriculture and natural resources are substantial in the Kurdistan region, and the economy, both traditionally and historically, was based on agriculture in the past. This had last until the middle of the last century. For instance, in 1957 64.7% of the economic structure of Kurdistan was based on agriculture (Ismael & Ngah, 2010), in 1960, over 67% of Kurds depended on agriculture for their livelihood (McCarthy *et al.*, 2008). Also in 1992, during the international sanction on Iraq, over half the population was living in rural areas and engaged in agriculture (O'Shea, 2004, p. 51).

In the second half of the nineteen century, the Kurdistan region struggled with many campaigns of repression, displacement, and sustainable infrastructure destruction, starting from 1961 to 1990 (MOP, 2012). The agriculture sector in the area had been heavily influenced by several decades of conflict, international sanctions, the double economic blocks imposed on the Kurdistan region by the central government and the United Nations during 1991-2003 (Gunter, 2012; United States Agency for International Development [USAID], 2008), and a civil war during 1993-1998 that compounded the problem (Agricultural Cooperative Development International and Volunteers in Overseas Cooperative Assistance [ACDI/VOCA], 2007). These events caused agricultural development to struggle for decades. For instance, in 1957, 64.7% of the economic structure of Kurdistan was based on agriculture, then these rates had dropped to 15.8% in 1987, 26% in 2000, and 8% in 2004 (Ismael & Ngah, 2010). According to Gunter (2012) during the period of time (1961 to 1990) more than 4,000 villages were destroyed and their inhabitants driven out of their locations, and many areas of natural

resources, such as rivers, water springs, forests and rangelands, were ruined and burned. Moreover, large areas of cultivable and arable lands were devastated and planted with millions of mines, which still poison the soil and threaten people, and prevent farmers from reclaiming and rehabilitating these areas (ACDI/VOCA, 2007; MOP, 2012).

1.3 Demographic Information

In some resources, the areas of Erbil, Sulaimani and Dohuk, which had its “Kurdistan Autonomous” in 1972, was only 35,284 sq.km, which is only 8.5% of the total area of Iraq (Dzięgiel, 1981, p. 10). Now, the actual total area of the Kurdistan region is 74,000 sq.km, which is about 17% of the total area of Iraq (O’Shea, 1991, p. 48), in which most of the area is governed by the Kurdistan Region Government (KRG). The population of the Kurdistan region was 4,698,790 in 2009, and it is expected to rise to 5,601,227 by 2016, with average male population 50.2% and females 49.8% (MOP, 2012). The population in the region is very young, with 50% under the age of 20 (Gunter, 2012). The present annual population growth is estimated at 2.75%, and a high rate is projected to continue till 2015 (Al-Hadithi, Shabila, Al-Tawil, & Othman, 2010). Regarding the distribution by urban/rural area (See table 1-1), other statistics indicated that 77.6% were urban population, 38% of this rate in the three big cities of Erbil, Sulaimani, and Dohuk (Ismael & Ngah, 2010) vs. 22.4 rural population (Ismael & Ngah, 2010; Gunter, 2012; MOP, 2012).

Table 1.1: *Population Distribution, Governorate's center, Districts, Sub-Districts, and Rural Areas*

Governorate	Population		
	Governorate's Center %	Districts and Sub-Districts %	Rural Areas %
Erbil	50.9	30.7	18.4
Sulaimani	33.4	45.4	21.2
Duhok	25.9	46.5	27.6
Mean	36.7	40.9	22.4

One of the statistical distribution concerns, as shown in Table 1-2, is economically active gender group, which overall rate was 69.7% for males and 12.9% for females in 2007, whereas, the average unemployment in centers and outskirts (districts, sub-districts, and villages) was 10.65% in centers and 15.86% in outskirts (MOP, 2012).

Table 1.2: *Population Distribution of the Working-Age Population in Economic Activity by Governorate*

Governorate	Rate of Participation in Economic Activity %		
	Males	Females	Total
Erbil	67.2	10.4	37.5
Sulaimani	74.4	17.3	44.6
Duhok	64.8	8.6	36.2
Average	69.7	12.9	40.3

1.4 Geo-Agricultural Information

Field crop cultivation is dominant in the Kurdistan region. The main crops are: wheat, barley, maize, sunflower, rice, chickpea, and lentils respectively (MOAWR, 2012; MOP, 2012). Vegetables come after field crops in importance. Tomato, cucumber, and eggplant are the main vegetables grown (MOAWR, 2012). Animal husbandry is an essential part of agriculture in the region as well. Sheep, goats, and cattle are the three main animals raised in the region. The main products are meat, milk, skin, and wool respectively (O'Shea, 2004, p. 51). According to the 2006 statistics, the total number of livestock was 2,195,319 head: 57% of this total number was sheep, 33% goats, and 10% cattle (MOP, 2012). Also, the region's agricultural contribution to Iraq's economy is very significant. For instance, Kurdistan provides 50% of the nation's wheat, 40% of barley, 98% of tobacco, 30% of cotton, and 50% of fruit. (USAID, 2008).

The water sources in the region consist of rainfall, the branches of the Tigris River, and groundwater. Big parts of the region contain an abundance of water resources, such as the Tigris (for over 150 km), the Great Zab (for over 150 km), the Little Zab (for over 250 km), and Sirvan (for over 150 km), and the two dams, Dokan on the Little Zab river (for useful capacity of 6800 MCM) and Derbendi Khan on the Sirvan river (for useful capacity of 300 MCM) (Geopolitics and International Boundaries Research Center [GIBRC], 1991, p. 48-49). The total annual water flow capacity stands at 30 billion cubic meters, of which 58.8% of the water sources are from the rivers located in the Kurdistan region and 40.2% are sourced from outside the region, and the total annual rain water is estimated as 8 billion cubic meters (MOAWR, 2012). The total

arable lands in the region are 1,535,794 hectares (MOAWR, 2012). Total area of rain fed and irrigated lands are over 1,219,821 hectares, which represents 34.96% of the region's total area while the rest is uncultivated. And, total rains fed areas are 1,068,237 hectares, which is 30.62% of the total area of the Kurdistan region, and represents 87.6% from the total of agricultural lands. (MOP, 2012). Statistics show that if the existing water is used properly it would irrigate the entire land instead of 11% it currently irrigates (MOAWR, 2012).

Depending on the aspect of physical geographic and annual rainfall, The Kurdistan region consists of the three following geographical regions (Dzięgiel, 1981, p. 12-16; MOP, 2012).

1.4.1 The Lowland

The Lowlands are treeless areas and more heights can be observed. The areas in this region reach a height of 250 to 500 m above sea level. The annual rainfall is 350-400 mm that helps cultivation of crops. Temperature falls to -9 or 15 during winter (mid-January) that cause damage to citrus fruit and date crops and it goes to +50 during summer season. The local farmers mainly raise sheep, with some goats and smaller number of cattle.

1.4.2 The Foothills and Dales

The areas in this region reach a height of 900 to 2,300 m above sea level, covered with small groves and a variety of plants, such as shrubs. The annual rain is 450-900 mm that permits cultivation of grain and leguminous plants; moreover, it is possible to grow

apricot and pomegranates. Sheep is predominate in animal husbandry, and more goats and cattle can be seen compared to lowland regions.

1.4.3 The Mountains

This region has predominant climate and the highest peak is Halgord that reaches 3,674 m. The land area is between 900 to 1,800 m above sea level, whereas, the mountains reach 1,800-2,000 m. To a large extend, this region is more inhabited and less cultivated and the natural woodland has been destroyed. The oak wood and shrubs grow in this area. The temperature lies between -20 to +45 during summer and winter seasons respectively. Apricot, pomegranate, figs, apples, pears, and nuts are grown here. The annual rain is 1,200 – 1,300 mm, and the animal husbandry is primarily of sheep, cattle, and goats.

1.5 Extension

1.5.1 History Background

In the recent decade, since the Kurdistan region has gone through a considerable development in the Middle East, very little is written about agricultural extension education. In the relatively profuse literature, it is hard to find detailed information about current agricultural extension education in the area. Regarding finding sources about agricultural extension in the past century, it is more complicated because Kurds have expropriated their land, and have, as a whole, affected their cultural, political system, economic, educational system, and social environment in many diverse ways with other nations' culture (Fikrat, 1993). Comparatively, statistical data and information about

Kurds usually come from non-academic sources. Therefore, most of statistical data and information in post-World War II were deduced by approximation and intelligent guesses because many of these countries that took a part of big Kurdistan after the partition in the post-World War II were denied that they have a Kurdish population until the past two decades (Fikrat, 1993).

Looking back to early history, Historic and clay tablet evidence were found drawn by priests in temples during Sumerians and other contemporary civilization era such as Media, the ancestral land of Kurds, back to 500 B.C., and education in Kurdistan emerged in the early simple education centers in mosques and other religious centers (O'Shea, 2004, p. 89). They were not much different than from those of the Arabic and Islamic World, and the objective was to teach Qu'ran, the Hadith, ethic, faith, and creation of social cohesiveness (Fikrat, 1993). This style of education remained until the late nineteenth century, when the extension of Ottoman rule saw the opening of modern schools (O'Shea, 2004, p. 89).

Back to Iraq's new history, the introduction of the modern co-operative agriculture movement in the 1970s, which came after the "Land Reform Act" in 1958, was created to initiate a new development of agriculture (Dzięgiel, 1981, p. 46). These reforms couldn't satisfy the needs of agricultural extension improvement in the Kurdistan area due to the fact that Kurdistan, like the other areas of Iraq, never experienced a stabilized era. Araj and Al-Jabouri (1986) states that, after 1960s, Iraqi regimes have failed to develop and implement policy to revitalize agrarian reform, and these failures reduced confidence in merit and value of the extension center. Similarly, in

the past two decades, poor government policy about agriculture and 20 years under international sanctions, isolation from many technological and educational advances became major problems in agricultural improvement (USAID, 2008).

1.5.2 Current Intellectual Educational Framework

In light of the current improvement in the KRG area, the current mindset of government employees, including extension field workers in the MOAWR, are largely formed by a generation that has lived in two very different political eras. Each individual was respectively employed by two very different governments in the educational system. The first political era was a totalitarian regime that lasted for some thirty years and had a pyramid and central system of government with a totally behaviorism educational system. Then, the second political era came to power as a result of revolution and uprising and repudiated almost everything from the former era. Therefore, in the past two decades, this generation has lived in a transition term from Top-Down and behaviorism systems to seek alternative forms, such as more participatory or moderate system.

1.5.3 The Existing Agricultural Extension System

Whyte (1981) documents two general models of agricultural research and development that were transferred to the developing countries after they had been created by industrialized nations. The first model, which was created before World War II, is the “vertical,” Top-Down model, which Whyte (1981) called the “European colonial model” and it was introduced to African and Asian developing countries. The second model was developed by the United States of America and was introduced to

Latin America and some Middle Eastern and Asian developing nations after 1945, which is called the “Horizontal” model (Whyte, 1981).

In the Top-Down approach, as in most developing countries, extension systems are implemented nationwide and centrally administrated (Fleischer, Waibel & Walter-Echols, 2002), in which “extension services are delivered by public sector, and extension agents are responsible for the transfer of technology and information from formal research to farmers, and they provide research with insights into farmers’ needs” (Sumberg & Okali, 1997, p. 16). These extension systems are institutionalized in public service sectors to stimulate development in rural areas in the context of economic modernization in young nations (Fleischer, *et al.*, 2002).

In Iraq, as it was colonized by the United Kingdom for decades after World War II, the Top-Down system of agricultural extension and its structure is still dominant. In the Kurdistan region, the organizational structure of the General Directorate of Research and Extension (GDRE) consists as a top down line of authority running from the GDRE in the Minister of Agriculture and Water Resources (MOAWR), to director of extension in governorates, to extension agents and then to the farmers in the rural areas. This Top-Down system is criticized by many extension scientists who are “convinced that it is no longer desirable to use a transfer of technology approach in which the extension administrator decides on the target and subject matter content to be realized by field-level extension.” (Sadighi & Mohammadzadeh, 2002).

The relevance of public agricultural extension services, which forms in Top-Down approach in many developing countries, is increasingly being questioned

(Fleischer, *et al.*, 2002). It has been criticized in many studies on developing countries, such as it creates a weak linkage between farmers, extension agents, and researchers (Abang, 2000; Asayehegn, Weldegebrial, & Kaske, 2012; Davis, 2008; Feder, Willett & Zijp, 1999;), and it fails to acknowledge and incorporate the local multiple sources of information that are available (Asayehegn, *et al.*, 2012; Davis, 2008; Feder, *et al.*, 1999; Hanson & Just, 2003; Picclotto & Anderson, 1997; Sullivan, 2004; Sumberg & Okali 1997, p. 18).

CHAPTER II

THEORETICAL FRAMEWORK

2.1 Introduction

This chapter introduces the thesis topic and theoretical framework from which it proposes to explore needed improvements and barriers in agricultural extension in the Kurdistan region of Iraq. In particular, the research will focus on needed improvements and barriers in planning and delivering extension activities, to be assessed by the willingness of extension experts, extension administrators, and extension agents for future extension program implementation in the region. The chapter also provides the objectives of the study, the methods used, and data processing.

2.2 Background Information

Iraq is known as the birthplace of agriculture and Kurdistan is famous for its fertile land and rich agriculture resources (GIBRC, 1991, p. 49) in which agriculture is the second largest national resource after oil and has the potential to contribute to the economy of the region and Iraq as a whole, serve in poverty reduction, and impact on economic stability in Iraq (USAID, 2008). The region of Kurdistan is located in the south-west of Asia and lies between latitude 34-37 and longitudes 41-46. Its climate belongs to the northern moderate region that is considered to be continental and semitropical. The sources of water in the region consist of rainfall, the branches of the Tigris River, and groundwater. The region has three areas of annual quality of rainfall,

ranging between 350-1,200mm (MOP, 2012). Big parts of the region have an abundance of water resources, such as the Tigris (for over 150 km), the Great Zab (for over 150 km), the Little Zab (for over 250 km), and Sirvan (for over 150 km) and the two dams, Dokan on the Little Zab river (for useful capacity of 6800 MCM) and Derbendi Khan on the Sirvan river (for useful capacity of 300 MCM) (GIBRC, 1991, p. 48-49)

This particular climate provides for diverse agricultural activities in the region, from planting crops and horticulture to rangeland and animal husbandry. The role of agriculture is remains important. However, agriculture has been heavily influenced by several obstacles, including displacement of people in the rural areas and destruction of sustainable infrastructure of agriculture, because of several decades of conflict, international sanctions, and poor government policies. Moreover, agriculture in the region has been affected by natural disaster, such as dust storms and the worst drought in three decades in the Kurdistan region (Zagonari, 2011).

After 1991, several events occurred that caused the agricultural sector in the Kurdistan region to experience a higher level of growth than the middle and southern parts of Iraq (ACDI/VOCA, 2007). Most of the villages that had been destroyed during the first Gulf War (1980-1988) were re-established again, and villagers had the opportunity to resettle in their villages and start doing agricultural activities again (Jinenez, & Kabachinik, 2012; MOP, 2012). In 1996, the United Nation's Oil-for-Food Program (OFFP) launched a relief operation in Iraq as a whole, and many international Non-Government Organizations (NGOs) directed their efforts to the Kurdistan region (ACDI/VOCA, 2007; Pellett, 1995). This has helped agriculture to revitalize again,

despite the poor economy and absence of government support. (Abbas, 2004; USAID, 2008).

From the post-war 2003 to now, the agriculture sector have faced many challenges in investment and growth, and it remained by the past legacy poor management (USAID, 2008). The status of national research and extension program is uncertain, and re-establishing the capacity of agricultural research and extension program has been paid attention by MOAWR and Ministry of Planning (MOP). International agencies such as USAID and other European organizations have emphasized rebuilding the agriculture sector in the Kurdistan region in the past ten years, and they launched many programs to redevelop agriculture. Some of these programs were focused on revitalizing agricultural extension, such as University of Hawaii that has worked on establishing centers of excellence in agricultural education, research, outreach, and training to support sustainable agriculture in the region. Also, Iraqi Agricultural Extension Revitalization (IAER) program by Texas A&M University that was worked on rebuilding extension capacity for MOAWR for several years, and it had a great impact on recruitment agricultural extension in the Kurdistan region as well.

The Kurdistan region consists of three governorates, Erbil (the capital of the region), Sulaimani, and Duhok. It is governed by the Kurdistan Region Government. The agriculture extension and research programs in the region is top down linear that have been implemented mainly by the GDORE in MOAWR since 1992. The organizational structure of GDORE is to consist of a Top-Down system of authority running from the GDORE in MOAWR to directors of extension in the three

governorates, Erbil, Sulaimani, and Duhok, to extension agents and then to the farmers in the rural areas. Those extension agents frequently have college degrees in relevant areas and are in charge of carrying out the extension program. The national extension service by the MOAWR is the only sector that has the legal status to provide extension services to the rural areas in the region.

2.3 Problem Definition

The agriculture extension and research program in the region is a top down linear approach and, from the post-war 2003 to now, has faced many challenges to improve, including poor government policy in the sector of research and extension as indicated by the USAID report, and inadequate agricultural extension activities in the extension centers, as indicated by the Ministry of Planning (MOP) of KRG. Moreover, Re-establishment of the capacity of agricultural research and extension program has been articulated in the five year strategy plan by the MOAWR (2010-2014). From this perception, finding needed improvements and barriers in implementing the current agricultural extension system is a crucial part for future planning in research and extension.

The above status of the extension program leads researchers to search for needed improvements and barriers in planning and delivering extension services to rural areas. Identifying those needed improvements and barriers will help administrators and extension agents to find alternative ways for better delivering public extension services. On the other hand, it helps researchers to find important recommendations for future

research about agricultural extension in the area. Finally, it will help MOAWR to better achieve its functions in delivering national agricultural extension services to people in the rural area of the region.

One of the important methods for assessing needed improvements and barriers in delivering agricultural extension activities is the Delphi method. Its research protocol has been approved by the Institutional Review Boards (IRB) from Texas A&M University and Texas Tech University. Choosing Delphi technique for the purpose of this study is especially important because very little is written about agricultural extension in the Kurdistan region and Iraq, data about agricultural extension is not abundant, and finding literature review about agricultural extension in the area is very difficult. In the light of current circumstance, Delphi technique, as a powerful method for assessing agricultural extension system, is chosen because it articulates the voices of extension experts, extension administrators, and extension agents to identify the demands in planning more effective extension activities in the future, and the obtained results help in lining recommendations for extension implementation and future research.

2.4 Literature Review

2.4.1 The Delphi Method

Delphi technique is developed and named by two Research and Development (RAND) Corporation scientists, Olaf Helmer and Norman Dalkey, in 1953 (Boyd, 2003; Cornish, 2004, p. 76; Linstone & Turoff, 1975, p. 10). The name “Delphi” goes back to a

Greek Oracle to Greek oracle, who was known for predicting events (Ulschak, 1983, p. 111).

Delphi is a group of techniques in a survey form (von der Gracht, 2012) that aims to obtain consensus on a controversial topic among experts, and/or advocates and referees, and they contribute information and knowledge (Boyd, 2003; Goluchowicz, & Blind, 2011; Landeta & Barrutia, 2011; von der Gracht, 2012). The Delphi technique is designed to provide the answer to one specific question or more (Boyd, 2003). It is characterized as a method of structuring group communication process by focusing on opinion building over a number of rounds (Dalkey, 1969; Goluchowicz, & Blind, 2011; Linstone & Turoff, 1975, p. 3; Ulschak, 1983, p. 112; von der Gracht, 2012).

The research protocol of the Delphi method as a forecasting tool (Dalkey, 2002; Linstone & Turoff, 2002; Weaver, 1971) has been approved by the IRB from Texas A&M University and Texas Tech University. Dalkey, Rourke, Lewis, and Snyder (1972) concluded that the Delphi method is reliable when a panel is truly representative of the expert community and that an engaged group of 13 would provide a 0.9 coefficient of reliability.

2.4.2 Delphi Development and its Applications

From our search about Delphi research, we found many specific areas used Delphi technique such as; recruitment of students into agriculture programs (Dyer & Breja, 2003; Dyer, Breja, & Ball, 2003), standardization foresight (Goluchowicz, & Blind, 2011), future forecasting (Boyd, 2003; Seagle & Iverson, 2002; von der Gracht, 2012), curriculum development (Harder, Place, & Scheer, 2010; Morgan, Rudd, &

Kaufman, 2004; Rritz, & Mantooth, 2005), human resource development (McGuire & Cseh, 2006), and perceptions of agricultural industry (Ramsey & Edwards, 2011).

According to Dalkey (1969) Delphi received a large boost in 1960s, and Ulschak (1983 p. 112) found that there are three traditional areas that the Delphi technique is used for: forecasting, policy investigations, and goal setting. Starass and Zeigler (1975) generalize Delphis into three types: numeric, policy, and historic, in which the goals of Delphi studies are predictions, recommendations, and interpretations, respectively.

Linstone and Turoff (1975, p. 4) state that Delphi technique is used in many different areas such as historical data, budget allocation, regional planning options, curriculum development, structuring a model, pros and cons of policy options, perceived human motivation, personal values, and social goals. According to von der Gracht, (2012) these wide spread applications of Delphi and its acceptability as a research tool in different disciplines gives the value to this technique that it has scientifically and practically proven, and he sees that, since 1950, Delphi has been used by many government agencies, universities, and other organization, and it has been developed with the five following stages:

1. Secrecy/obscurity (1950s): military context application.
2. Novelty (1960s): introduction to the public.
3. Popularity (1970-1975): spread to Europe and Asia, and was major forecasting tool for business.
4. Scrutiny (1975-1980): critical evaluation of the technique's reliability and validity.

5. Continuity (1980-1986): stabile application patterns after acceptance in science and practice.

2.4.3 Characteristics of Delphi Technique

According to (Dalkey, 1969; Landeta & Barrutia, 2011; Starauss & Zeigler, 1975; von der Gracht, 2012) Delphi has the following distinct features:

- 1- Anonymity: the participants do not know each other, and the process is controlled by a coordinator and dominant individuals and specious persuasion are reduced (Dalkey, 1969; Landeta & Barrutia, 2011; von der Gracht, 2012). There is no socio-psychological pressure on the panelists and it avoids willingness to abandon publicly expressed opinion (von der Gracht, 2012). This feature helps participants “to put in a position to share what they really think and feel” (Ulschak, 1983, p. 116).
- 2- Iteration: the procedure is performed in a series of rounds, which reduces intentional and unintentional noise, such as irrelevant, non-productive, and potentially frustrating communication (Dalkey, 1969; Landeta & Barrutia, 2011; von der Gracht, 2012).
- 3- Controlled feedback: irrelevant information is deleted by coordinator (Landeta & Barrutia, 2011). Opinions cannot be rejected or accepted for personal reasons or by the trust or mistrust of other participants, but all opinions should be examined, and “extremist” opinions that lie outside the norm should justify their position because there is tendency for people to go closer to the center of the opinion (Ulschak, 1983, p. 116).

- 4- Statistical group response: a quantitative and statistical treatment of the answers is carried out (Landeta & Barrutia, 2011); this feature helps to reduce group pressure conformity (Dalkey, 1969).

2.4.4 Delphi Application in Needs Assessment

Regarding the use of Delphi technique for needs assessment, Ulschak (1983, p. 112) believes that the researcher will find it useful in needs of assessment, goal settings, identifying future areas that need to be considered. Starauus & Zeigler (1975) sees Delphi technique is an effective tool for policy performance, and a vehicle for formulation, development, and assessment of new alternative policy options. Linstone and Turoff (1975, p.3) states that Delphi technique is effective in allowing a group of homogeneous participants to deal with a complex problem in order for planning and decision-making. Finally, Dalkey (1969) indicates that Delphi technique is used in many different fields, including education and exploring policy formation.

2.4.5 The Delphi Policy

Since the Delphi technique was introduced, it has been used in many field studies and attempted for use in possible educational development and planning. Policy Delphi, which is of interested to planners, was developed by Murray Turoff to formulate policies in urban development (Ulschak, 1983, p. 112). Starauus and Zeigler (1975) explain the goal of the policy Delphi is “to define a range of answers or alternatives to a current or anticipated policy problem”. According to Linstone and Turoff (1975, p. 84) policy Delphi generates strongest possible opposing opinions on an important policy problem that needs a solution, where there are no experts, only advocates and referees, but

experts or analysts may participate to estimate quantifications and/or analyticities for the policy problem that is studied. Policy Delphi answers a policy question, in which, “policy question is defined here as one involving vital aspects, such as goal formation.” (Linstone & Turoff, 1975, p. 75).

Linstone and Turoff (1975, p. 85) explain that government organizations make examination and exploration for their policy issues through a committee process approach. When these organizations become bigger, representing all members’ views becomes difficult for a researcher or employer, who wants to bring people together across the organization, and it is too time consuming. Therefore, policy Delphi operates as the precursor to committee activity, in which it can be used for committee process approach in social sciences as committee output, input, or designed as a committee evaluation tool (Starauss & Zeigler, 1975). Thus, policy Delphi is rather a tool for the analysis of a policy problem and exploring the solutions for a complex problem (Landeta & Barrutia, 2011; Picavet, Cassiman, & Simoens, 2012), but not a mechanism for decision-making (Picavet *et al.*, 2012; Starauss & Zeigler, 1975).

Ulschak, (1983, p. 113) states that the main difference between policy Delphi and earlier Delphis is dealing with problems where values and emotions are involved, instead of dealing with only firm facts, and it uses problem-solving and decision-making as well.

Regarding the number of participants in a policy Delphi and the use of its results, Linstone and Turoff (1975, p. 86-88) states that ten to fifty people, under the many sides of the issue, can be used as participants. Many policy Delphi studies have been conducted for pressing decision-making contexts as an instrument for consultation

(Landeta & Barrutia, 2011), and evaluation and formulating policy recommendation (Picavet *et al.*, 2012).

2.4.6 Consensus in Delphi Studies

The primary goal of a Delphi study is efficient structure of a group communication (von der Gracht, 2012). Consensus measurement is an important component of data analysis and interpretation in any Delphi study. However, depending on consensus, stopping rounds is not the central idea of a Delphi study, because the term “consensus” as agreement between participants is different than the term “stability” as consistency in responses between successive rounds of a Delphi (Dajani, Sincoff, & Talley, 1979).

Accordingly, von der Gracht, (2012) states that group stability is considered the necessary principle in a Delphi study, and a 15% change or lower in any two rounds is considered a stable situation for an item, therefore, using “stability” is recommended as a measurement for when to stop a Delphi survey. Other researchers see problems arise regarding when to end Delphi depending on the percentage of responses that fall within the prescribed range for an item that is being measured. Dajani *et al.* (1979) state that the measures for the “dispersion criteria for a group of responses are neither necessarily nor strictly measures of consensus.”

Ulschak (1983, p. 112) sees that consensus may be reached depending on communications between participants, but not depending on discussion, which involves interpersonal factors such as self-confidence (or lack) that makes some participants under considerable tension to conform to the dominant opinions.

2.4.7 Summary

The Delphi technique is more a controlled debate defined “as a general methodology than a hard fast method,” and, it can be used to identify problems, barriers and needs to establish solutions and goal settings. It has no certain fixed procedure and it remains flexible to circumstance and degree (Ulschak, 1983, p. 113-114). The main goal of Delphi is to obtain a reliable group view, who can share valuable contributions, seeking to resolve a complex issue (Landeta & Barrutia, 2011), and its result is subject to greater acceptance on the part of the participants than are the consensus reached at by directed forms of face-to-face interaction (Dalkey, 1969). The validity of a Delphi study depends rather on the expertise of the panel who participate, but not on the number of participants (Ludwig, 2005). Two features of Delphi technique that differentiate it from other controlled scientific methodologies are lack of sampling and absence of clearly defined procedures and process (Ludwig, 2005).

2.5 Objectives of the Study

The primary purpose of this study is formulated to accomplish two objectives. First, to identify the needed improvements in planning and delivering extension activities. Second, to identify barriers that prevent or limit planning and delivering extension activities.

2.6 Research Questions

In the context of the existing Top-Down approach of extension system in the Kurdistan region, the research will investigate:

- 1- What improvements are needed in planning and delivering extension activities in the extension system in the MOAWR?
- 2- What barriers exist that have limited extension workers in MOAWR to achieve improvements in planning and delivering extension activities?

2.7 Population

The population of interest for this study includes 50 government employees (10 extension experts, 15 extension administrators, and 25 extension agents) that have worked and/or are working in the MOAWR as extension workers.

2.8 Methods and Data Processing

The modified Delphi method, as a forecasting tool (Dalkey, 2002; Linstone & Turoff, 2002; Weaver, 1971), is used in conducting this research to develop consensus about needed improvement and barriers in planning extension activities in the area. The research protocol of the Delphi method, as a forecasting tool (Dalkey, 2002; Linstone & Turoff, 2002; Weaver, 1971), has been approved by the IRBs from Texas A&M University and Texas Tech University. Dalkey *et al.* (1972) concluded that the Delphi

method is reliable when a panel is truly representative of the expert community and that an engaged group of 13 would provide a 0.9 coefficient of reliability.

50 purposely selected employees (10 extension experts, 15 extension administration, and 25 extension agents) are invited to participate in the three-round design. All the correspondence between researchers and participants was by individual e-mails, in Kurdish and Arabic, and panelists responded using a confidential web-based form. In Round I, panelists are asked to identify one to five needed improvements for planning and delivering extension activities, and one to five barriers that prevent or limit planning and delivering extension activates. Information obtained from Round I is collected, examined, and organized, and then used to create Round II survey questionnaire. In Round II, panelists are asked to indicate whether they agree or disagree with each of the statements in the questionnaire. To identify these statements and proceed assigning value rating, a six-point Likert scale is employed with a 1= “Strongly Agree”, 2 = “Agree”, 3 = “Somewhat Agree”, 4 = “Somewhat Disagree”, 5 = “Disagree”, and a 6 = “Strongly Disagree”.

Based on the feedback from respondents to the second questionnaire in Round II, a third questionnaire is made from statements that received at least two-third respondents with scales 1 = “Agree” and/or 2 = “Strongly Agree” from the six-point Likert scale. Then, in Round III, the third questionnaire is e-mailed to ask the panelists to reevaluate each statement for a defense of extreme ratings. The purpose of Round III is to begin the process of developing consensus among the participants, extension experts, extension administrators, and extension agents. Equally, statements that received less two-third

respondents with scales 1 = “Strongly Agree” and/or 2 = “Agree” from the six-point Likert scale are excluded from the instrument and the rest of the statements are remained to be discussed for the study.

2.9 Definition of Terms

For the purpose of this study the following definitions are given:

1. The Kurdistan region (the area of the study): It is located in the north of Iraq, and consists of three provinces (Erbil, Sulaimani, and Duhok), and Garmean Area.
2. Ministry of Agriculture and Water Resources (MOAWR): It is the only sector that has the legal status to provide extension services in the Kurdistan region.

The agriculture extension and research program has been implemented mainly by the GDORE in the MOAWR since 1992, since the first government was established in the region in 1992. The organizational structure of GDORE consists of a top down linear of authority running from the GDORE in MOAWR to directors of extension in governorates, to extension agents and then to the farmers in the rural areas. Those extension agents frequently have college degree in relevant areas and are in charge of carrying out the extension program.
3. Agricultural Research Centers in Erbil, Sulaimani, and Duhok: these are the only three agricultural research centers in the Kurdistan region. They work under the MOAWR to solve problems in agriculture and improve its products. They contribute in regular yearly planning for the agricultural extension program in the region.

4. Iraqi Agricultural Extension Revitalization (IAER) Program: Extension program that was implemented by USDA to reestablish extension program in Iraq during 2007-2012. It has performed by the Norman Borlaug Instituted for International Agricultural at Texas A&M University. The program trained several hundreds of government extension workers and focused on educational training capacity in Iraq and Kurdistan region.

CHAPTER III

METHODOLOGY AND DATA COLLECTION

3.1 Survey Development

For this study, a modified Delphi-survey was implemented to develop group consensus. A total of 50 participants were identified as panel members for this study and three rounds were used to achieve consensus. The panel of participants was chosen purposely. In Round I, for the instrument of the first questionnaire, two open-ended questions were employed to gather potential needed improvements and barriers in planning and delivering extension activities. Then, two more instruments were developed from the data that is provided by the panelists in Round I for Round II and Round III of the study. There were several reasons for selecting the Delphi technique for this study.

1. The goal of this study was to identify needed improvement and barriers in agricultural extension with a purposely selected group consisting of extension experts, extension administrators, and extension agents. A group judgment and consensus was preferable to definite analytical methods.
2. The research questions employed in this study are subjective and lend themselves to the use of Delphi method.
3. The Delphi method is an effective way in which responses help to create the instrument from one round to another.

3.2 Purposes and Objectives

The objective of this study was to find the perceptions of a selected group of participants (extension experts, extension administrators, and extension agents) regarding the needed improvements and barriers they credit in delivering extension services to farmers. The purpose of selecting these needed improvements and barriers is to better plan and deliver extension services to clientele in communities and villages in the Kurdistan region or Iraq in the future. Two open-ended questions were developed to investigate these objectives.

3.3 Population

The population for this study was extension experts, extension administrators, and extension agents employed by MOAWR in the KRG/Iraq. The Delphi Panel members were purposely selected after receiving their contact information (e-mails and cell phone numbers) from the GDORE. The total panel members received was 64 people. Then, 50 of them were purposely chosen. They consisted of 10 extension experts, 15 extension administrators, and 25 extension agents. Identified individuals were government employees working in the Research and Extension department in the MOAWR, which is the only sector that provides public agricultural extension services in the area. All the groups, experts, administrators, extension agents, were identified after receiving information from the extension department in the MOAWR. The experts group work in extension department, and they have expert title in MOAWR. The administrators groups work in the three research and extension centers in Erbil,

Sulaimani, and Duhok, and they manage, plan, and deliver public extension services in the three governorates in the region. The last group was extension agents frequently have college degrees in relevant areas and are in charge of carrying out the extension program to the rural areas.

Of the 50 panelists invited by e-mail to participate in the study, 26 accepted and responded to the survey in Round I. 14 members of the Round I panel completed the survey in Round II, and all the 14 members in the Round II panel completed the survey in Round III.

3.4 Survey Instrumentation

Three instruments were developed for the questionnaires in the three rounds in the study. All the survey questionnaires were administrated online using Qualtrics software. The instrument developed for Round I of the modified Delphi asked the participants to provide their responses to two open-ended questions, which derived from our reading of the literature review of the extension system in the Kurdistan region and the gaps. The first question asked the participants: “what improvements are needed in the Extension system in the Kurdistan Region of Iraq to allow educators and staff to better serve clientele in communities and villages in the region?” The option is given to the respondents to provide one to five items they believe are needed improvements for better planning and delivering extension activities in their work. The second question was asked: “what barriers exist that have limited you from achieving these improvements?” Equally, the option is given to the respondents to provide one to five

items they perceived as barriers in planning and delivering extension activities in the rural area. Statements are collected from 26 panelists who responded to the questionnaire in Round I.

A total of 182 statements (see Appendix J) from 26 respondents who provided at least one needed improvement or barrier were received. These statements were collected and translated from their original languages (Kurdish and Arabic) to English. The translated statements were then examined and identified by the researcher to find commonalities among them, and then to combine similar items and organize them in an instrument. The new combined and organized instrument, which consisted of 27 needed improvements and 23 barrier statements (see Appendix G), was then used to create the second questionnaire. In Round II, panelists were asked to indicate whether they agreed or disagreed with each of the statements in the second questionnaire. To identify these statements and proceed assigning value rating, a six-point Likert scale was employed with a 1 = “Strongly Agree”, 2 = “Agree”, 3 = “Somewhat Agree”, 4 = “Somewhat Disagree”, 5 = “Disagree”, and a 6 = “Strongly Disagree”.

Based on the feedback from respondents to the second questionnaire in Round II, a third questionnaire was made from statements that received at least two-third respondents with scales 1 = “Strongly Agree” and/or 2 = “Agree” from the six-point Likert scale. In Round III, the third questionnaire was e-mailed to ask the panelists to reevaluate each statement for a defense of extreme ratings. The purpose of Round III was to begin the process of developing consensus among the participants, extension experts, extension administrators, and extension agents. Equally, statements that

received less than two-third respondents with scales 1 = “Strongly Agree” and/or 2 = “Agree” from the six-point Likert scale were excluded from the instrument and the rest of the statements were left to be discussed for the study.

3.5 Data Collection Procedure

The study was initiated by sending a letter of invitation (see Appendix B) to the 50 identified panel members by e-mail (see Appendix A) with a brief explanation about objective and procedure of the study and the importance of their collaboration. In the meantime, another e-mail was sent to ask the panelists, who accept the invitation in the previous e-mail, to start participating in the study by answering the survey questions in Round I (see Appendix C). Together with the e-mail, a text message was sent to the panelists informing them that they received two e-mails from researchers at Texas A&M University and asked them to check their e-mails.

All the survey questionnaires were administrated online through Qualtrics software. The study used the contact information for the panelists that is provided by GDORE in the Research and Extension centers. The contact information consisted of first name and second name, or first, second, and third name for each employee with his or her e-mail address and cellphone number. Consistency of the information (first, second, and third names of the panelists) between the lists provided by GDORE and real e-mail addresses on the web could not be obtained or assured.

Due to the web problems in sending e-mails, when the first and last names are not matched with the first and last names of the e-mails’ owners on the web, these emails

go to spam and junk folders. The study did not use the Qualtrics software group panels to distribute the surveys. Instead, the study used researcher's Texas A&M University e-mail address that ends with "edu" and has less chance to go to spam and junk folder of recipients when the survey were distributed.

After sending the invitation letter and first questionnaire by two separate e-mails, 41 panels accepted the invitation and answered the first questionnaire. 15 responses were empty forms without providing any statements, and they were excluded from the Round I survey. A total 182 statements (102 needed improvements and 80 barriers) were received from 26 participants who provided at least one statement of needed improvement or barriers (see Appendix J). 16 statements (10 needed improvements and 6 barriers) were removed because they were not relevant to the study and total 176 (92 needed improvements and 76 barriers) remained. The 176 statements were then examined and identified to find commonalities among them. The new combined and organized instrument, which consisted of 27 needed improvements and 23 barrier statements were used to create the second questionnaire in Round II (see Appendix G). Based on the feedback from respondents to the second questionnaire in Round II, a third questionnaire was made from statements that received at least two-third respondents with scales 1 = "Strongly Agree" and/or 2 = "Agree" from the six-point Likert scale to create the third questionnaire in Round III.

3.6 Round I

In Round I, two open-ended questions were sent to panelists by e-mail (see Appendix F). The first question asked the participants: “what improvements are needed in the Extension system in the Kurdistan Region of Iraq to allow educators and staff to better serve clientele in communities and villages in the region?” Option is given to the respondents to provide one to five items they feel appropriate for needed improvements for better planning and delivering extension activities in their work. The second question was asked: “what barriers exist that have limited you from achieving these improvements?” Equally, option is given to the respondents to provide one to five items they perceived as barriers in planning and delivering extension activities in rural area. A text message was sent to all panelists to inform them that they have received an e-mail from researchers at Texas A&M University to check their e-mails. One week was given to panelists to answer the survey questionnaire. 26 responses were received, in which three of them were empty forms and 23 were filled out with at least one statement in the needed improvement or barrier section. Then, a reminder e-mail (see Appendix C) was sent to the participants to answer the survey questionnaire. Due to the first distribution survey through a researcher’s personal Texas A&M University e-mail address and not through Qualtrics software, the study could not separate the panelists who did respond to the survey from who did not, and the reminder e-mail was sent to all the 50 participants again with a note in the beginning says “Thank you for participating in our study, if you did accept our invitation and answer the survey questionnaire in the previous e-mail last week, please disregard the rest of this e-mail.” Then, the e-mail asked panelists to

answer the survey questionnaire and five days were given to participate before closing the survey and starting Round II. 15 responses were received after the first reminder e-mail, in which 14 were empty form without providing any statements and one form was filled out. At the end of Round I, 102 needed improvements statements and 80 barrier statements (see Appendix J) were received from 26 panelists who completed the questionnaire.

3.7 Round II

In Round II, an e-mail (See the Appendix D) was sent to panelists thanking them for their participation and answering the survey questionnaire in Round I. Due to the distribution survey process through a researcher's personal Texas A&M University e-mail address and not through Qualtrics software, the survey questionnaire was sent to all the 50 participants. The second question of the questionnaire, after selecting the language in the first question, was: "I am one of the participants of the Round I survey." Then, two options, "Yes" and "No", were given to the participants. The "Yes" respond was to take the respondent to the questionnaire and the "No" respond was to take respondent to the end of the survey.

The e-mail that was sent to all the 50 participants included a note in the beginning saying: "if you did not accept the invitation and/or did not answer the survey questionnaire in Round I, please disregard the rest of this e-mail." Then, the e-mail was asking the panelists to start answering the questions in Round II. One week was given to the panelists to answer the questionnaire. 15 responses were received during the week.

One form was empty and one form was rated all the statements with the same rate, 3 = “Somewhat Agree”. Then a reminder e-mail (see Appendix D) was sent to all the participants again with a note in the beginning saying “Thank you for participating in our study, if you did not respond to the Round II questionnaire last week and/or did not respond to the Round I survey, please disregard the rest of the e-mail.” Then, the e-mail informed the panelists that this e-mail is the last chance to respond to the Round II survey. Five days was given to the panelists to respond to the Round II questionnaire. After the reminder e-mail, nine more responses were received, in which eight of them were empty forms and one was filled out. At the end of the survey, 23 responses were received. Nine of them were excluded and fourteen responses were used for statistical analysis.

3.8 Round III

Similarly to the Round II, an e-mail (see the Appendix E) was sent to all of the fifty participants thanking them for their participation and answering the survey questionnaire in Round II. The second question of the survey was: “I am one of the participants of the Round II survey” to respond to “Yes” or “No” answers. One week was given to the panelists to answer the questionnaire. 14 responses were received during the week. One respondent rated all the statements with the same rate, 3 = “Somewhat Agree”, and three were empty forms. Then, a reminder e-mail was sent the panelists informing them that this is the last change to respond to the Round III survey. Equally, five days was given to the panelists to respond to the Round III questionnaire.

After the reminder e-mail (see Appendix E), eight more responses were received, in which four of them were empty forms and four were filled out. At the end of the survey, 22 responds were received. Eight of them were excluded and 14 responses were used for statistical analysis.

CHAPTER IV

RESEARCH FINDINGS

4.1 Survey Development

The purpose of this chapter is to report the research findings for Round I, II, and III of the Delphi study. The findings for Round I include the components of needed improvements and barriers that were provided by panelists for each of the two open-ended questions. The research findings for Round II include the frequency of data distribution of panelists' rating summary. Then, the research finding for Round III include the data received and a frequency distribution of ratings from panelists after eliminating the items that are not rated by two-thirds of the panelists in Round II.

4.2 Round I

Two open-ended questions were emailed to the 50 purposely selected panelists. The first question asked the panelists: "what improvements are needed in the Extension system in the Kurdistan Region of Iraq to allow educators and staff to better serve clientele in communities and villages in the region?" The second question asked them: "what barriers exist that have limited you from achieving these improvements?" The panelists were allowed to provide one to five examples of needed improvements and barriers of extension activities. 26 panelists responded to the survey questionnaire in Round II. Panelists provided 102 needed improvements and 80 barriers (see Appendix J). Panelists' responses ranged from at least one needed improvement or barrier to five

needed improvements and five barriers. After receiving the responses, it was found that the panelists used different terminology and expression for the same components, and some statements were not relevant to the study. All the statements were translated from their original languages, Kurdish and Arabic, to English. Then, all the translated statements were examined and identified by researchers to find commonalities among them, and then the similar items were combined and organized into a new instrument. The new instrument consisted of 27 combined and organized needed improvement items and 23 barrier items, and was then used to create the second questionnaire for Round II (see Appendix G). Tables 4.1 and 4.2 illustrate the results of Round II.

4.3 Round II

The statements received from the first questionnaire were organized, after combining similar items, to create the second questionnaire in Round II (see Appendix G). The survey in Round II used a six point rating Likert scale. The rating scale was: 1= strongly agree, 2= agree, 3= somewhat agree, 4=somewhat disagree, 5=disagree, and 6=strongly disagree. The survey questionnaire was emailed to all panelists, asking them to rate their level of agreement or disagreement with each statement of needed improvements and barriers in planning extension activities. 15 panelists answered the questionnaire in Round II. The Statistical Package for the Social Sciences (SPSS) was used to compute the statistics. Statistical means for each element in each statement were calculated for all respondents. Each panelist's response was recorded and the frequency distribution for each statement and percentage of agreement were calculated.

Table 4.1: *Frequency for agreement levels for needed improvements in planning extension activities, round two (n=14)*

Items	<i>f</i> 1-2	Percentage rated 1-2
Participating experts in developed countries in extension trainings and research	14	100
Extension agents need to empower themselves with knowledge and information about extension activities they do	13	93
Using new technology in extension activities	13	93
Strengthening relationship between extension and research	13	93
Identifying farmers' issues and needs	12	83
Performing field experiments in farmers' fields and demonstrating the results in extension activities	12	86
Involving field demonstration method in extension activities	12	86
Providing transportation for extension agents to deliver extension activities	12	86
Involving farmers in planning extension activities	12	86

Table 4.1 Continued

Items	<i>f</i> 1-2	Percentage rated 1-2
Increase the education level of administrative and technical staff in extension offices	12	86
Giving higher level of authority to district and sub-district extension offices	12	86
Reducing bureaucracy	12	86
Providing research centers with scientific resources, such as access to journals	12	86
Extensive training course for extension in different fields in the KRG	12	86
Increasing extensive extension training courses for extension agents in developed countries in different fields	12	86
Supplying extension centers with equipment and building laboratories	11	79
Increasing authority of extension agents who work in lower levels in the structure of extension department	11	79
Conducting more applied research in research centers in different fields	11	79

Table 4.1 Continued

Items	<i>f</i> 1-2	Percentage rated 1-2
Involving private sector in delivering extension services	11	79
Developing extension activities to an appropriate level for farmers' knowledge and needs	10	77
Extension agents need to pay attention to restoring the trust between extension department and farmers	10	77
Giving bigger role to media in delivering extension activity news	10	77

Table 4.2: *Frequency for agreement levels for barriers in planning extension activities, round two (n=14)*

Items	<i>f</i> 1-2	Percentage rated 1-2
Inappropriate structure of extension department	14	100
Lack of scientific resources about (specify) extension activities	14	100
Lack of extensive training courses in different fields of extension activities	13	93
Lack of connection between research and extension	13	93
Timing issue in delivering extension activities, and providing support needed to extension agents	13	93
Too much bureaucracy between MOAWR, extension administration, and extension workers	13	93
Lack of motivation and encouragement from MOAWR to extension agents	13	93
Lack of long term strategic plan	12	86
Lack of disciplinary plan consisting of different types of extension activities	12	86
Lack of MOAWR's interest in improving extension activities	12	86

Table 4.2 Continued

Items	<i>f</i> 1-2	Percentage rated 1-2
Lack of authority for extension agents	12	86
Lack of financial support	11	85
Lack of transportation	11	77
Lack of research in different fields of extension activities	11	77
Lack of knowledge, information, and skills about different fields of agricultural science by extension agents	11	77
Lack of cooperative organizations helping in extension activities	10	71
Weakness in communication between administration, extension agents, and farmers	10	71
Difficulty in obtaining new technology for using in extension activities	10	71
Political views of Extension administration	10	71
Loss of trust between extension department and farmers	10	71

Two-third of panelists' rating for a statement as "1=strongly agree" and/or "2=agree" is used as a criteria to determine if a statement should be used in the next round or not. There was an extremely high level of agreement from the panelists on the needed improvements and barriers in planning extension activities. From the total of 27 statements of needed improvements 22 of them received two-third level of agreement for scales "1=strongly agree" and/or "2=agree". Comparatively, from the total of 23 statements of barriers, 20 of them received two-third level of agreement for scales "1=strongly agree" and/or "2=agree" (see Appendix H).

4.4 Round III

The responses from the Round II questionnaire were collected and used to create the Round III questionnaire. Accordingly, the survey in Round III used a six point rating Likert scale. The rating scale was: 1=strongly agree, 2=agree, 3=somewhat agree, 4=somewhat disagree, 5=disagree, and 6=strongly disagree. Similar to Round II, the survey questionnaire was emailed to all 50 panelists, asking them to rate their level of agreement or disagreement with each statement of needed improvements and barriers in planning extension activities. Each panelist's response was recorded and the frequency distribution for each statement and percentage of agreement were calculated. Two-third of panelists' rating for a statement as "1=strongly agree" and/or "2=agree" is used as a criteria to determine if a statement should be included in the result of the study or not. All of the 22 statements of needed improvements obtained two-third of agreement for scales "1=strongly agree" and/or "2=agree". Comparatively, from the total of 20

statements of barriers, 19 of them obtained two-third of agreement for scales “1=strongly agree” and/or “2=agree” (see Appendix I). Tables 4.3 and 4.4 illustrate the results of Round III.

4.5 Data Analysis

The analysis data for Round III resulted in the deletion of five needed improvements statements and three barriers in planning extension activities. The results of the study were 22 needed improvements and 19 barriers that were identified by the panelist. The response rate for Round I was 55%, Round II 28%, and Round III 28%. Table 4.5 shows the detail of participants of each round

Table 4.3: *Participation rate in Round I, Round II, and Round III (N=50)*

Round I		Round II		Round III	
Participants	Percentage	Participants	Percentage	Participants	Percentage
26	52%	14	28%	14	28%

Table 4.4: *Frequency for agreement levels for needed improvements in planning extension activities, round three (n=14)*

Items	<i>f</i> 1-2	Percentage rated 1-2
Strengthening relationship between extension and research	14	100
Increase the education level of administrative and technical staff in extension offices	14	100
Identifying farmers' issues and needs	13	93
Performing field experiments in farmers' fields and demonstrating the results in extension activities	13	93
Involving field demonstration method in extension activities	13	93
Giving higher level of authority to district and sub-district extension offices	13	93
Reducing bureaucracy	13	93
Extension agents need to empower themselves with knowledge and information about extension activities they do	13	93
Extension agents need to pay attention to restoring the trust between extension department and farmers	13	93

Table 4.4 Continued

Items	<i>f I-2</i>	Percentage rated 1-2
Supplying extension centers with equipment and building laboratories	12	86
Giving bigger role to media in delivering extension activity news	12	86
participating experts in developed countries in extension trainings and research	12	86
Extensive training course for extension in different fields in the KRG	12	86
Increasing extensive extension training courses for extension agents in developed countries in different fields	12	86
Involving private sector in delivering extension services	12	86
Developing extension activities to an appropriate level for farmers' knowledge and needs	11	79
Providing transportation for extension agents to deliver extension activities	11	79
Involving farmers in planning extension activities	11	79

Table 4.4 Continued

Increasing authority of extension agents who work in lower levels in the structure of extension department	11	79
Conducting more applied research in research centers in different fields	11	79
Providing research centers with scientific resources, such as access to journals	11	79
Using new technology in extension activities	11	79

Table 4.5: *Frequency for agreement levels for barriers in planning extension activities, round three (n=14)*

Items	f 1-2	Percentage rated 1-2
Inappropriate structure of extension department	14	100
Timing issue in delivering extension activities, and providing support needed to extension agents	14	100
Lack of financial support	14	100
Lack of disciplinary plan consisting of different types of extension activities	13	93
Lack of cooperative organizations helping in extension activities	13	93
Lack of extensive training courses in different fields of extension activities	13	93
Lack of connection between research and extension	13	93
Lack of long term strategic plan	12	86
Lack of MOAWR's interest in improving extension activities	12	86
Lack of authority for extension agents	12	86

Table 4.5 Continued

Items	f 1-2	Percentage rated 1-2
Loss of trust between extension department and farmers	12	86
Lack of transportation	12	86
Too much bureaucracy between MOAWR, extension administration, and extension workers	11	79
Lack of motivation and encouragement from MOAWR to extension agents	11	79
Lack of research in different fields of extension activities	11	79
Lack of knowledge, information, and skills about different fields of agricultural science by extension agents	10	71
Political views of Extension administration	10	71

Table 4.5 Continued

Items	f 1-2	Percentage rated 1-2
Weakness in communication between administration, extension agents, and farmers	10	71
Lack of scientific resources about (specify) extension activities	9	69

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The purpose of this chapter is to present a summary of the data collected, analysis of the data, conclusions, and recommendations drawn for extension activities' policy in the MOAWR and future research suggested by this study.

5.2 Problem Definition

The agriculture extension and research program in the region faces many challenges to improve, including poor government policy in research and extension as indicated by the USAID (2008) report. MOP (2012) has indicated in the Regional Development Strategy report (2012-2016) that agricultural extension activities in the extension centers are inadequate. In addition, re-establishment of the capacity of agricultural research and extension program is articulated in the five year strategy plan by MOAWR (2010-2014).

The current agricultural extension in MOAWR relies heavily on the Top-Down approach model in providing public extension services that is dominant in all of the government foundations in Iraq and Kurdistan region. The organizational structure of the GDORE is to consist of a top down liner of authority running from the GDORE in the MOAWR to the directors of extension centers in the three governorates, Erbil, Sulaimani and Dohuk, to extension agents, and then to the farmers in the rural areas. This Top-

Down approach has been criticized by many extension scientists who “convinced that it is no longer desirable to use a transfer of technology approach in which the extension administrator decides on the target and subject matter content to be realized by field-level extension” (Sadighi & Mohammadzadeh, 2002). In Kurdistan region and Iraq, a considerable attention has been given to rebuild agricultural extension system since the United States’ invasion to Iraq in 2003. Many program from the United States and European universities have worked on rebuilding agricultural extension in the region, such as University of Hawaii that was worked on establishing centers of excellence in agricultural education, research, outreach, and training to support rebuilding sustainable agriculture in the Kurdistan region and Iraqi Agricultural Extension Revitalization (IAER) program by Texas A&M University that was worked on revitalizing extension capacity for MOAWR for several years. These program guided researchers’ attention to conduct researches about agricultural extension assessment in the region.

5.3 Purpose of the Study

The major purpose of this study was to identify needed improvements and highlight barriers in planning and delivering agricultural extension activities for future improvement of the region’s agricultural extension. The study assessed planning extension activities by the involvement of extension experts, extension administrators, and extension agents. The purpose of the study was to accomplish two objectives: First, to identify the needed improvements in planning and delivering extension activities.

Second, to select barriers that prevent or limit planning and delivering extension activities.

5.4 Summary of Methodology

A three-round Delphi technique was the main procedure used to conduct three online survey questionnaires in this study. From the 50 individuals who were invited to participate in this study, 26 participated in Round I, 14 in Round II, and 14 in Round III, resulting in 52%, 28%, and 28% participation in the three rounds respectively. From the reviewed literature, two open ended questions were developed: (1) what improvements are needed in the planning and delivering extension activities in the Kurdistan Region of Iraq to allow educators and staff to better serve clientele in communities and villages in the region? (2) what barriers exist that have limited extension workers from achieving these improvements? The panelists were asked to list one to five items for each question. After data collection from Round I, 102 needed improvements and 80 barriers statements provided by the panelists. Then, the information is examined and organized. 10 items from needed improvement list and eight items from barriers list were non-relevant items and were excluded from the data, and then similar items examined and combined to create a new questionnaire for Round II. In Round II, the questionnaire consisted of 27 needed improvements and 23 barriers.

In Round II, panelists were asked to rate their level of agreement or disagreement with each statement of needed improvements and barriers that they provided in Round I. A six-point Likert scale was used on the following Likert-type scales: 1 = "Strongly

Agree”, 2 = ”Agree”, 3 = “Somewhat Agree”, 4 = “Somewhat Disagree”, 5 = “Disagree”, and 6 = “Strongly Disagree”. A total 14 panelists answered the questionnaire, consisting of a 26% response for the Round II. The needed improvements and barriers that received two-thirds of agreement (numbers 1 and 2 in the six-point Likert scale) were used to create the third questionnaire for Round III.

In Round III, Panelists were asked to indicate their level of agreement or disagreement with each statement for the second time. Equally, the same Round II six-point Likert scale was used for Round III. From the 23 needed improvements and 20 barriers in the Round III questionnaire, all the 23 needed improvements and 19 barriers received two-thirds agreement (numbers 1 and 2 in the six-point Likert scale).

5.5 Summary of Findings

Based on the analysis of the data, the result of this study yielded many interesting findings that have implications for future policy of extension activity planning and future research. The major findings are summarized in three overall future implementation theme areas and three distinct future research areas for agricultural extension activities that are subsequent results from the needed improvements and barriers identified by the panelists, expert, administrations, and agents, participated in the modified Delphi study. The overall implementation theme and distinct research areas were determined in relation to the two objectives of the study presented in chapter two. Objective one was improvements that are needed in planning and delivering extension activities and

objective two was the barriers that exist and limit extension workers from achieving any improvements.

The needed improvements and barriers that are received more than two-thirds agreement from panelists in Round III are corresponded to these three following overall implementation theme and future research areas. Percentage of agreement rate is indicated with each of needed improvements and barriers.

5.5.1 Community Based Program Development

The needed improvements and barriers that are bond to this them area were: identifying farmers' issues (93%), performing field experiments in farmers' fields and demonstrating the results in extension activities (93%), involving field demonstration method in extension activities (93%), extension agents need to pay attention to restoring the trust between extension department and farmers (93%), developing extension activities to an appropriate level for farmers' knowledge and needs (79%), providing transportation for extension agents to deliver extension activities (79%), involving farmers in planning extension activities (79%) Increasing authority of extension agents who work in lower levels in the structure of extension department (79%). The barriers that are affiliated with this theme area were: timing issue in delivering extension activities, and providing support needed to extension agents (100%), lack of financial support (100%), lack of authority for extension agents (86%), and lack of transportation (86%).

5.5.2 Building Capacity Program

The needed improvements that are bond with this implementation theme area were: increase the education level of administrative and technical staff in extension offices (100%), extension agents need to empower themselves with knowledge and information about extension activities they do (92%), supplying extension centers with equipment and building laboratories (92%), involvement of experts in developed countries in extension trainings and research (86%), extensive training course for extension in different fields in the KRG (86%), increasing extensive extension training courses for extension agents in developed countries in different fields (86%), using new technology in extension activities (78%). The barriers were: lack of extensive training courses in different fields of extension activities (93%), lack of research in different fields of extension activities (79%), lack of knowledge, information, and skills about different fields of agricultural science by extension agents (79%), and lack of resources about fields of agriculture science (69%).

5.5.3 Institutional Structuring

The needed improvements and barriers that are linked with this them were: strengthening relationship between extension and research (100%), giving higher level of authority to district and sub-district extension offices (93%), reducing bureaucracy (93%), giving bigger role to media in delivering extension activity news (86%), involving experts in developed countries in extension trainings and research (86%), involving private sector in delivering extension services (86%), Then, the barriers: inappropriate structure of extension department (100%), lack of cooperative

organizations helping in extension activities (93%), lack of connection between research and extension (93%), lack of long term strategic plan (86%), too much bureaucracy between MOAWR, extension administration, and extension workers (79%), political views of extension administration (72%), and weakness in communication between administration, extension agents, and farmers (72%) were bound to this them area.

5.6 Conclusions

The Kurdistan region is considered as a young developing county with much less literature studied have been done about agricultural extension. The result findings of the study were to obtain a collection of needed improvements and barriers in the planning and delivering extension activities to the rural areas in the region. Based on the findings, community based program development, capacity building, and institutional structuring implementations are three theme areas that should be considered in the overall extension policy by MOAWR. These three implementation theme areas will be more broadly conceived as planning and delivering extension activities that MOAWR should focuses on in order to achieve further improvement.

Furthermore, the results will provide key points and details for each of the three implementation theme areas that could lead decision-maker and administration staff in GDOR to pursue further improvements in providing extension services to the clients and communities in the rural areas in the region. In addition, the result findings of the study could categorize succinct groups for future extensive research, such as leadership in extension, personal traits of extension agents, and external extension communication.

These three distinct research areas will lead researchers to navigate to agricultural extension and agricultural education in the Kurdistan region in the future.

5.7 Recommendations

What are the key points for each of the three implementation theme area found in the study that MOAWR should focus on in order to achieve further improvement? The recommendations of the study will answer this question and provide some key points to decision-makers and administration staff in GDORE and MOAWR for better agricultural extension policy in the region. The following recommendations are key points that were drawn from assessment and interpretation of the result findings of the study for each of the three implementation theme areas:

5.7.1 Community Based Program Development

Based on the conclusions and findings presented in the study, it is recommended that the policy that directs the extension program should be congruent with farmers and extension agents' voices: priorities should include identifying farmers' issues and developing extension activities to an appropriate level of farmers' knowledge and skills. The top down organizational structure of the GDORE in the MOAWR can no longer satisfy the field level demands in extension within the current policy approach. This Top-Down approach has been criticized by many extension scientists who are "convinced that it is no longer desirable to use a transfer of technology approach in which the extension administrator decides on the target and subject matter content to be realized by field-level extension" (Sadighi & Mohammadzadeh, 2002; Sharma, 2002).

1. It is recommended that farmers should be involved in planning extension activities, such as making decisions about subject matters, methods used, modality of conducting, and timely delivery of extension activities. The voices of the extension agents who work in the lower level in the structure of GDORE should be considered by GDORE in planning these extension activities as well.
2. It is recommended that emphasis should be placed on the methods that promote farmers-extension agents communication, such as field demonstration and field experiments in farmers' farms and other extension methods that utilize communication improvement.

The study found that panelists believe that extension activities face funding issues, particularly transportation funding for extension agents. This could be due to poor political support for GDORE or poor budget administration for extension in MOAWR. Government funding resources in the region are mainly from oil, and distribution of fund for government organizations is highly affected by the structure of the KRG and budget allocation administration for each ministry. The amount of yearly funding for MOAWR and its belonged departments is varied from one year to another and one department to another within the structure of MOAWR as well.

Furthermore, within a certain program, the allocated budget is managed as a whole. There are no restrictions for budget distribution on the program, such as percentages for program administration, transportations, etc. Therefore a budget allocation for any extension activity and percentage' distribution of the budget are more

political, related to decision-makers in the MOAWR, and vary from one program to another and one year to another.

3. Based on these circumstances, it is recommended that MOAWR should increase the budget allocation for GDOR. Included in this budget should be well-defined allocations to support planning, such as percentages for administration, transportation, etc.

5.7.2 Building Capacity Program

The extension worker, administrator and agents, need to be supported through a continual capacity building program to increase their knowledge and skills in different fields of agricultural science. For this purpose:

1. It is recommended that MOAWR to make a definite effort to provide materials and activities that utilize the advantages of capacity building program. Within the current capacity building programs that MOAWR have, increasing quality of training courses and workshops, including extensive training course focused on different subject matter, involving experts from developed countries, and including exchange travels to developed countries in any capacity building programs are highly recommended.
2. Likewise, it is recommended MOAWR to support extension centers by upgrading extension resources, laboratories, and improving linkage to information and research sources regionally and internationally.

Furthermore, the findings were inferring that the administrators and agents are lacking in extension program development training and course work. Panelists essentially concluded that extension administration is in-need for increasing technical skills in planning extension activities.

3. Forthwith, it is recommended that attempts should be placed on the direction toward encouraging extension workers to obtain bachelor and masters degrees in agricultural extension, agricultural education, rural development, and related degrees.
4. Also, it is recommended that MOAWR should provide opportunities for professional development, such as leadership development.

Administrative staff and specialist should be taken into consideration in any capacity building program, in addition to increasing advanced degree holder among administration staff.

5.7.3 Institutional Structuring

The findings indicated that extension workers perceiving that the public extension by itself can no longer respond to the various demands of the rural areas in the region. This is likely be one of the biggest indicators that have isolated extension system, and prevents it from communicating with related foundations. Accordingly, it is concluded that delivering extension activities are enhanced by efforts from private sectors, cooperative organizations, NGOs, and other foundations. Involving these organizations and foundations in MOAWR's extension activities will complement and supplement extension services provided to the rural areas. This finding agrees with

Sharma (2002) and her suggestion *Multi-agency extension Service* for India's agricultural extension policy. Notably, due to using (*Ba damazraway krden*), which refers to *Institutional Structuring in government* in Kurdish, by politicians, and has been articulated by media in the past several years, *Institutional Structuring* concept is more comprehensive in any extension policy reform in the region.

1. Thus, it is recommended that MOAWR should initiate a reform toward institutional restructuring of conducting extension activities by connecting the extension activities with a wide network of organizations and foundations, such as other government organizations, research institutes, media foundations, cooperative organizations, and private sector.
2. It is also recommended that MOAWR should reduce the heavy bureaucracy and eliminate unnecessary elements of paper-work in planning and conducting extension activities at all the levels. Enhanced communication from farmers' communication channels to GDOR ending in decision-makers' determination of procedures in the MOAWR to improve access to GDOR by farmers and extension agents.
3. Due to the extension services taking place in district and sub-districts, it is equally recommended for MOAWR to increase the authority of district and sub-district extension offices.

Furthermore, the result findings of this study found that extension workers believe that extension continue to face internal problems in relation to organizational structure of the GDOR and involving political views in administration positions. This

finding agrees with Gunter's (2012) nepotism run rampant in government foundations in the Kurdistan region. For the past 10 years the organizational structure of the KRG has made a few minor adjustments. However most of the major changes have taken place within the upper level structure of KRG. For instance, in 2010 three ministries: agriculture, water resources and environment, were combined in MOAWR. Otherwise, the organizational structure of GDORE has not been changed since the establishment of the KRG in 1992.

4. It is recommended, however, it involves high authority of the KRG to split the major organizational structure of GDORE into few of may be several specialized organizations, such as youth development, crop management, community development, etc.
5. It is also recommended for MOAWR to reduce the impact of involving political views in extension administration positions.

5.8 Further Research

From the above overall theme areas resulted from the modified Delphi study, the following recommendation are made for future research studies about agricultural extension:

In developing countries, "there is a concern with the development of the capacity of people to identify and solve their own problems and determine their own future" (Elliot, 1989). The Kurdistan region, since being established in 1992, is in a transition toward a more open region and developing of participatory approaches of its public

organizations. From the interpretation of the result findings of this study, it can be inferred that agricultural extension has a lack of leadership and administration specialist.

1. Further research should be conducted to examine leadership in extension, such as identifying local leaderships' traits, leadership development, and administration specialist promotion. These studies would serve as an important step to develop extension leadership in the region.

Since this study used Delphi technique to examine extension workers' perceptions, all experts, administrators, and agents were managed as one group panelists in all of the rounds used in the study. Consequently, the results findings of the study provided overall implementation theme areas.

2. future research is recommended using three groups of panelists, experts, administrators, and agents with three different groups of questions and three separated modified Delphi to obtain a collection of more precise results about needed improvements and barriers in planning and delivering extension services, and consequently provide precise implementation theme areas for future extension policy in the region.

The result of the study in Round I revealed that the statements provided by panelists were rather broad areas than to be distinct subjects of needed improvements and barriers in planning and delivering extension activities. This result indicates knowledge and skills gaps in the ability to identify and determine problems by the panelists.

3. Future research should be conducted about personal traits of extension workers, particularly extension agents to identify these gaps. These studies would serve in promoting extension capacity building program for GDORE.

The third implementation theme area that is presented in section (5.7) was institutional structuring for extension activities, which recommended for MOAWR for future implementation of extension policy in the region. Strengthening this implementation theme area is dependent on communication between GDORE and its partners, such as other government foundations, research institutions, cooperative organizations, NGOs, and private sector.

4. Further research should be conducted about external extension communication.

This would serve to provide MOAWR and GDORE vision about how to structure extension activities and how to operate roles of complement, supplement, and partnership of these partners to the public extension activities?

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APPENDIX A
INVITATION EMAIL

Invitation Email

Hello Collages...

You are receiving this e-mail because you have been invited to participate in a study on "A Study to Assess Needed Improvements and Barriers in Planning and Delivering Agricultural Extension Activities in the Kurdistan region of Iraq."

Please, find the attached file, the invitation letter, and see the detailed information about the study.

Thank you for your time.

Yousif Khoshnaw
Graduate student at Texas A&M University
Department of Agricultural Leadership, Education & Communications.

هاوێیان/ سلاوتان لێیئت .

ئێوه ئهم نامەیه وەر نهگرن بۆ ئهوهی بڵاگهئشت بکۆن بۆ بهژداری کردن له وێژینه و میهکێڕی نمای کشتوگلی له باره ی "ههقسهنگاندنی پلان و گهیانندی چالاکیهکانی ئێنمای کشتوگلی له ههوی می کوردستانی عێراق، پێویستییهکانی گهشپێدان و کۆسپهکان". تکایه نامە ی هاوێچ وهر بگره بۆ زانیاری زیاتر له باره ی وێژینه و مهکه .

زۆر سوپاس بۆ کانتان.

یوسف خوشناو

قوتابی خوێندنی بالā له زانکۆی ئێکساس ئه ی ئێم

بهشی ئه ی ئێل ئی سی

Arabic Version Continued

الأصدقاء/ السلام عليكم . .

أنتم تستقبلون هذا الإيميل لغرض دعوتكم للمشاركة في بحث تحت عنوان "دراسة لتقييم التحسينات المطلوبة والموانع في تخطيط وتنفيذ أنشطة الإرشاد الزراعي في إقليم كردستان العراق". رجاءً إستلموا رسالة المرفق للمعرفة المزيد من المعلومات حول الدراسة.

شكراً لوقتكم

يوسف خوشناو

طالب دراسات العليا في جامعة تكساس أي إم

قسم أي إل إي سي

APPENDIX B
LETTER OF INVITATION

Letter of Invitation

Memorandum To: Certain Extension Employees in KRG Region of Iraq
From: Yousif Khoshnaw and Dr. Jeff Ripley
Subject: Invitation to Participate in Research Study

Greetings:

You are invited to participate in a short survey as part of a research project, entitled "*A Study to Assess Needed Improvements and Barriers in Planning and Delivering Agricultural Extension Activities in the Kurdistan region of Iraq.*" This study involves research designed to help us identify needed improvements in the Extension System in the KRG Region of Iraq, and help the researchers develop a plan to overcome barriers to meet these needed improvements. The benefits to this study will be to assist the researchers and Extension leaders in the KRG to improve the current structure and programmatic efforts of the Extension Service.

You were chosen because you are an employee in the Ministry of Agricultural and Water resources KRG/Iraq, or extension agent familiar with and/or involved in extension programs in the Kurdistan region. Your participation is voluntary, but very important for this study because you can represent many other extension agents in the Kurdistan region. Your responses to this survey will be confidential to the extent permitted or required by law. Thank you very much for your time!

Dr. Jeff Ripley, Assistant Professor and Extension Specialist at Texas A&M AgriLife Extension Service, and Mr. Yousif Khoshnaw, a graduate student in the Department of Agricultural Leadership, Education and Communications at Texas A&M University are conducting this study.

Your participation will involve your initial input of information on two short questions. That data will then be summarized back into a survey and returned to you for your help in prioritizing and validating the aggregated responses to the questions. We are confident that the information you provide will help us make the Extension Service in the KRG Region stronger, and more dedicated to serving the needs of the people of the KRG.

Should you have any questions, please do not hesitate to contact either or both of us.

Sincerely,
Yousif Khoshnaw
Yousif@tamu.edu

Dr. Jeff Ripley
j-ripley@tamu.edu

نامهی بلڤهئ شتکردن: بۆ کۆنیهکی دیارکراو له رابهرانی کشتوگلی له ههویی می کوردستانی عێراق
له لایهن: یوسف خالد و جیف ریبلی
بابهت: بانگهئ شت بۆ بهشداری کردن له ههویی ژینهوه

سلاو:

ئوه بلڤهئ شت کراون بۆ بهشداری کردن له رابهریهکی کورت له پرۆژهیهکی ههویی ژینهوه به ناوێشان (ههویی ژینهوهیهک بۆ ههوسهنگاندنی پلان و گهیااندنی چالاکیهکانی ئهمنای کشتوگلی له ههویی می کوردستانی عێراق، پێویستییهکانی گهشپهکان و کۆسپهکان) ئهوه ههویی ژینهوهیه نهخشیهیهک له خۆ دهگهێت که یارمهتی ئهمنه دهدات له دیاری کردن پێویستییهکانی گهشپهکانی سیستهمی ئهمنای کشتوگلی له ههویی می کوردستانی عێراق، ههروهها یارمهتی ههویی ژهران دهدات بۆ گهشپهکانی پلانکی دیارکراو بۆ زهلهوون بهسهر کۆسپهکان به مهیهستی گهیشتن به پێویستییهکانی گهشهکردنی سیستهمی ئهمنای کشتوگلی. سودی ئهوه ههویی ژینهوهیه نهوهیه دهته نامرزانێک بۆ یارمهتی دانی ههویی ژهران و کار بهدهستانی ئهمنای له ههویی می کوردستان بۆ گهشپهکانی پێکتهیه ئهستای بهرنامهی کاری خزمهتگوزاری ئهمنای کشتوگلی.

ئوه ههویی ژهران، چونکه ئهوه کارمهندن له وهزاریتی کشتوکال و ئاوێری حکومهتی ههویی می کوردستانی عێراق، یاخود رابهری کشتوگلی و شارهزان ههروهها/یاخود باشداریتان کردوه له بهرنامهی گهشپهکانی ئهمنای کشتوگلی ههویی می کوردستان. بهشداریکردنتان خۆ بهخشانهیه، بهلام زۆر گرنگه بۆ ئهوه ههویی ژینهوهیه چونکه تو دهتوانی ههویی نهرایهتی رابهرانی کشتوگلی بهکی له ههویی می کوردستان. مافی بهشداری کردنت لهم رابهریه پانزراو و دوور له چاوێری دهت تا ئهوه ئاسته یاسهئهی و دیاری بکات.

زۆر سوپاس بۆ کانت. پروفیسور جیف ریبلی/ مامۆستای یاریدەر و پێشوری ئهمنای له زانکۆی ئیکساس ئهمنی/ خزمهتگوزاری ئهگری لایف و یوسف خوشناو قوتابی خهندن بۆ له بهشی سههرکرده وهئهرکردن و پهوهندییه کشتوگلییهکان له زانکۆی ئیکساس ئهمنی ئهمنه ههوهستن به ئهمنای دانی ئهوه ههویی ژینهوهیه. بهشداری کردنت له ههویی ژینهوهیه دهستپهکهات به پێدانی چهند زانیاریهک بۆ وهلام دانهوهی دوو پرسیار. پاشان ئهمن زانیاریانه کۆدهکۆتیهوهی له گهله وهلامی کهسانی تر و پاشان له ئهوهی رابهری دووباره بۆتان رهوانه دهکۆتیهوه بۆ ئهوهی یارمهتی دهربن له ریزبهندی کردن زانیاریهکان به پێی گرنگیان. ئهمنه ئهمنای لهوهی ئهمن زانیاریانه ئهوه به ئهمنای دهیهخشن خزمهت گوزاری ئهمناییه کشتوگلییهکان له ههویی می کشتوکال به ئهمنای تر دهکات و زیاتر به هانای خزمهتکردنی پێویستییهکانی خۆک دهت له ههویی می کوردستان.

تکایه هههر پرسیارێکتان ههیه، دودلی مهکهن به پهوهندی کردن بۆ هههریهک له ئهمنه یاخود ههرووکمان.

الدكتور جيف ريبلي
j-ripley@tamu.edu

به ئهمنایهوه!
يوسف خوشناو
Yousif@tamu.edu

مذكرة إلى: مجموعة معينة من الموظفين إقليم كردستان العراق

من: يوسف خوشناو والدكتور جيف ريبيلي

الموضوع: دعوة للمشاركة في دراسة بحثية

تحية طيبة:

انتم مدعوون للمشاركة في مسح قصير كجزء من مشروع بحثي بعنوان "دراسة لتقييم التحسينات المطلوبة والموانع في تخطيط وتنفيذ أنشطة الإرشاد الزراعي في إقليم كردستان العراق". تشتمل هذه الدراسة على بحث مصمم لمساعدتنا في تحديد التحسينات المطلوبة في منظومة الإرشاد في إقليم كردستان العراق، ومساعدة الباحثين في تطوير خطة لتجاوز الموانع ومن ثم تحقيق التحسينات المطلوبة. الفوائد من هذه الدراسة هي مساعدة الباحثين وقادة الارشاد في حكومة إقليم كردستان في تحسين الهيكل الحالي وجهود وضع البرامج للخدمة الإرشادية.

لقد تم اختيارك لأنك موظف في وزارة الزراعة والموارد المائية في حكومة إقليم كردستان / العراق، أو لأنك مرشد زراعي و/أو لكونك مشارك في برامج الإرشاد في إقليم كردستان. إن مشاركتك طوعية، ولكنها مهمة جدا لهذه الدراسة لأنك تمثل العديد من المرشدين الآخرين في إقليم كردستان. استجابتك لهذا المسح ستكون سرية بحدود القانون. شكرا جزيلا على وقتك!

كل من الدكتور جيف ريبيلي، أستاذ مساعد ومتخصص بالإرشاد في خدمة اكريليف الارشادية في جامعة تكساس أي أند أم، والسيد يوسف خوشناو، طالب دراسات عليا في قسم القيادة والتعليم والاتصالات الزراعية في جامعة تكساس أي أند أم هما القائمان على هذه الدراسة.

سوف تشتمل مشاركتك على الإدخال الأولي للمعلومات على سؤالين قصيرين. وبعد ذلك يتم تلخيص هذه البيانات في مسح وتعاد اليك للمساعدة في ترتيب الأولويات والتحقق من صحة الإستجابات على الأسئلة. نحن واثقون من أن المعلومات التي تقدمها ستساعدنا في جعل خدمة الإرشاد في إقليم كردستان أقوى، ومكرسة أكثر لخدمة احتياجات مواطني الإقليم.

إذا كان لديك أية استفسارات، يرجى عدم التردد في الاتصال بنا. رجاء أنقر على الرابط أدناه للبدء بإجراء المسح.

مع خالص التقدير

الدكتور جيف ريبيلي

يوسف خوشناو

j-rip@tamu.edu

Yousif@tamu.edu

APPENDIX C
ROUND I EMAILS

First Email

Hello Collages...

I hope this e-mail finds you very well.

Following inviting you to participate in a Delphi study that is conducting by Texas A&M University in the previous e-mail under the title ““A Study to Assess Needed Improvements and Barriers in Planning and Delivering Agricultural Extension Activities in the Kurdistan region of Iraq”, please click on the following link to start answering the questions in the first round survey of the study, in case you agree to collaborate with us.

<link>

Thank you for your time.

Sincerely
Yousif Khoshnaw

First Email Kurdish Version Continued

بهۆی زان: سلاوتان لێی ئێت

.ههيوادارين تۆ له لای کی خوشدابیت لهکاتی وەرگرتنی ئهم بۆی ئه

دوابه دواى باگهيشت کردنت بۆ بهژداری کردن له وێژینهوهیهکی دۆقهی له بۆی ئێ پێشووتر که له لایهن زانکوی وێژینهوهیهک بۆ ههڵسهنگاندنی پلان و گهيانددنی چالاکیهکانی ئێ کساس ئه ی ئێم ئه نجامدوئیت به ناو نیشانی رێنمای کشتوگلی له ههوی می کوردستانی عێراق پێویستی ههکانی گهشپێدان و کۆسپهکان"، تکایه کرتیه بکه له سههر ئهم لینکهی خواروه تاکو بچیته ناو سایتی راپرسیهکه و دهستبکهی به وهلامدانوهی پرسیار ههکانی قوناغی یهکه می وێژینهوهکه، گهر بریاری هاوکاری کردنی ئێمهت داوه

<لینک>

!زۆر سوپاس بۆ کانت

به ئێسۆزیهه!

یوسف خوشناو

First Email Arabic Version Continued

أصدقاء: السلام عليكم

نتمنى وأنتم في أوقات طيبة في وقت تستقبلون هذا الإيميل

بعد دعوتنا لكم للمشاركة في بحث دلفي في الإيميل السابق وللتي يتم إجراؤها من قبل جامعة تكساس أي إم تحت عنوان "دراسة لتقييم التحسينات المطلوبة والموانع في تخطيط وتنفيذ أنشطة الإرشاد الزراعي في إقليم كردستان العراق"، رجاءً انقر على الرابط التالي للدخول إلى صفحة المرحلة الأولى للاستفتاء وجواب على الأسئلة، في حال قررت المشاركة.

<رابط>
شكراً للوقت

بلطف
يوسف خوشناو

Reminder Email

Hello collages...

Thank you for participating in our survey in the first round.

We will send you two more e-mails in the next few weeks to participate in the second and third round.

If you are one of the participants who have answered our questions in the first round survey last week, please disregard this e-mail because this is a reminder e-mail for those who did not answer our questions yet.

Collages...

You were invited last week to a voluntary participation in a research under the title “A Study to Assess Needed Improvements and Barriers in Planning and Delivering Agricultural Extension Activities in the Kurdistan region of Iraq”. This e-mail is a reminder and your last chance to participate and start answering the questions in the first round survey. Please click on the following link to begin the survey, in case you agree to collaborate.

<link>

Wednesday, March 6 is the last day to participate in the survey before closing this round and starting round two.

Thank you for your time.

Yousif Khoshnaw

Reminder Email Kurdish Version Continued

بەڕێزان سڵاوێتان لێ ئێت . . .

زۆر سوپاس بو بەشدار یکردنتان لە ڕاپرسیە کەمان لە قونای یەکەم.
ئێمە لە ماوەی چەند هەفتەی داهاوودا دوو ئۆڵی تێتان بۆ دهن رین بۆ بەشدار ی کردن لە قونای دووم و ئێمە
وتێ ژینە مەمان.
گەر تۆ لەو بەشدار بوانە کە وەلامی ڕسپار مەکانی قونای یەکەم ڕاپرسیە کە ئێمەت دایمە لە ماوەی هەفتەی
ڕابردوو، تکایە گرنکی بە ئۆڵی مەدە، چونکە ئەمە تەنها ئۆلی وە بیر خستەو مە بۆ ئەو بۆی زانە کە ئێستا
وەلامی ڕسپار مەکانیان نەداو مەو.

بەڕێزان . . .

ئێو لە هەفتەی ڕابردوودا بانگهێشت کرا بۆ بەشدار ی کونێکی خۆبەخشانه لەوتێ ژینە مە کورت بە
ناوێشانی "وتێ ژینە مە کە بۆ هێسەنگاندنی پلان و گەیااندنی چالاکیەکانی ئێمە کشتوکلێ لە هۆمی
کوردستانی عێراق، ئێو یستێ مەکانی گەشپێدان و کۆسپەکان"
ئێمە ئێمە دوا هەلی ئێو مە بۆ ئەو بەشدار ی بکەن لەوتێ ژینە مە کە و دەست بکەن بە وەلام دانەوێ ڕسپار مەکانی
ڕاپرسیە کە لە قونای یەکەم. تکایە کلێک لە سەر ئەم لێنکە خوار مە بکە، گەر ڕیاری بەشدار ی کردن دەدیت.

<لێنک>

رۆژ چوار شەممە 6 ی ئازار دوا رۆژی بەشدار ی دینت لەم قونای ئێش دەستێ کردنی قونای دووم، زۆر
سوپاس بۆ کانت.

زۆر سوپاس بۆ کانت
یوسف خوشناو

Reminder Email Arabic Version Continued

أصدقاء: اسلام عليكم

شكراً لمشاركتكم في إستفتائنا في المرحلة الأولى.
نحن و في غضون بضعة أسابيع قادمة سوف نرسل إليكم إيميلين آخرين للمشاركة في مرحلتي الثانية والثالثة للإستفتاء.
إذا انت من المشاركين الذين جاوبو على أسئلة إستفتائنا في المرحلة الأولى في الاسبوع الماضي، رجاءً تجاهل هذا الإيميل. لأن هذا الإيميل فقط تذكير للذين لم يجابوا على الأسئلة بعد.

أصدقاء

كنتم مدعون من قبلنا للمشاركة الطوعية في بحث تحت عنوان ""دراسة لتقييم التحسينات المطلوبة والموانع في تخطيط وتنفيذ أنشطة الإرشاد الزراعي في إقليم كردستان العراق". هذا الإيميل تكون اخر فرصة للمشاركة و بدء اجابة على اسئلة المرحلة الاولى في للإستفتاء. رجاءً انقر على الرابط التالي، إذا تقرر المشاركة.

<رابط>

يوم الأربعاء، الموافق 6 آذار تكون اخر يوم المشاركة في هذه المرحلة . شكرا لوقتكم

شكراً للوقتكم
يوسف خوشناو

APPENDIX D
ROUND II EMAILS

First Email

Hello Collages...

Thank you for participating in our research in the first round.

If you did not accept our invitation and/or did not answer our questions in the first round survey in the last two weeks, please disregard the rest of this e-mail because this is the second round survey and this e-mail only for those who had participated in answering the questions in the first round survey.

Collages...

Our second round survey is a collection of your information in the first round. We would like you to help us in ranking and validating the findings.

For this purpose, a new survey is prepared for the second round.

Please click on the following link to begin ranking and validating each statement.

<link>

Thanks you very much for your valuable time.

Thank you for your time.

sif KhoshnawYou

First Email Kurdish Version Continued

بۆ ئێزێ: سڵاو تان ئێزێت

سوپاس به بەشدار یکردنتان لە ڤێژێنە و مەمان، لە قونای یەکمەمی راپرسیەکە.
گەر تۆ بانگێشتەکە ئێمەت قەبول نەکرد هەروەها/یاخود بەشدار ی وەلام دانەوی پرسیا یەکانی راپرسیەکەمانت
نەکرد لە ماوەی دوو هەفتەمی رابردوو لە قونای یەکمەم، تکایە گرنگی بەم ئێمە مەدە، چونکە ئەمە قونای
دووومی راپرسیەکەمی و ئەم ئێمە تەنها بۆ ئەوانەیە کە لە قونای یەکمەمدا بەژداری وەلامدانەویان کرد.

بەم ئێزان . . .

قونای دووومی راپرسیەکەمان گۆراوەی زانیاریەکانی ئێو مە لە قونای یەکمەم ئێمە ئەمانەوی ئێمە جارە
یارمەتیمان بدەن بە ریزبەند کردنی ئێمە زانیاریانە بەم ئێزێ گرنگیان.
بۆ ئەم مەبەستە راپرسیەکی نوێ تایبە بەم قونای ئامادەکراوە.
تکایە کلێک لەسەر ئێمە لینکەمی خوار مە بکە بۆ چوونە ناو ویب ساینی راپرسیەکە و ریزبەند کردنی هەر
دەستەواژەمێک لە بەرامبەر خۆیدا.

<لینک>

زۆر سوپاس بۆ کاتی بۆ ئێزێت.
یوسف خوشناو

First Email Arabic Version Continued

أصدقاء: السلام عليكم

شكراً لمشاركتكم في بحثنا، المرحلة الأولى للإستفتاء.
إذا انت لم تقبل دعوتنا و/أو لم تشارك في الإجابة على أسئلة إستفتائنا في فترة الاسبوعين الماضيين في المرحلة الأولى . رجاءً تجاهل هذا الإيميل، لان هذه المرحلة الثانية و هذا الإيميل خاص للذين شاركو في الإجابة في مرحلة الأولى للإستفتاء فقط.

أصدقاء

المرحلة الثانية في استفتائنا هو مجمل معلوماتكم المرد إلينا في المرحلة الاولى، نحن نود منكم مساعدتنا بتقييم وتصنيف عباراتها حسب الأهمية.
لهذا الغرض، قد صممت إستفتاء جديد و خاص بهذه المرحلة.
رجاءً انقر على الربط التالي للدخول الى صفحة الإستفتاء و بدء بتقييم و تصنيف عباراتها.

<ربط>

شكرا لوقتكم
يوسف خوشناو

Reminder Email

Hello collages...

Thank you for participating in our research in the second round.

We will send you one more e-mail in the next few weeks to participate in the third round.

If you are one of the participants who have answered our questions in the second round survey last week, please disregard this e-mail, because this is a reminder e-mail for those who did not answer our questions in the second round yet.

Collages...

You were received an e-mail last week to participation in answering the question in the second round survey which was a collection of your information from the first round.

This e-mail is a reminder and your last chance to participate in the survey. Please click on the following link in case you agree to continue participating.

<link>

Sunday, March 24 is the last day to participate before closing this round and starting round three.

Thank you for your time.

Yousif Khoshnaw

Reminder Email Kurdish Version Continued

بەڕێزان سڵاوێتان لێ ڤیت . . .

زۆر سوپاس بو بەشدار یکردنتان لە ڕاپرسیە کەمان لە قونای دووهم. ئێمە لە ماوەی دوو هەفتەی داهاوودا یەكئێفێ ئێ تێتان بۆ نۆنرین بۆ بەشدار ی کردن لە قونای سێ یەمی ڤێژینە مەمان. گەر تۆ لەو بەشدار بوانە ی کە وەلامی ڕێسیار مەکانی ئێمە دایە لە قونای دووهم لە ماوەی هەفتەی ڕا بردوو، تەکیە گەرنگی بێ ئێمە مەدە، چونکە ئێمە تەنھێم ئێ وە بێر خستەو یە بۆ ئەو بۆ ئێزانە ی کە ئێشتا وەلامی ڕێسیار مەکانیان نەدا و تەو لە قونای دووهم.

بەڕێزان . . . ئێو لە هەفتەی ڕا بردوو ئێمە ئێکتان وەرگرت بۆ بەشدار ی وەلام دانەو ی ڕێسیار مەکانی قونای دووهم کە ڕێتی بوو لە ڕێژینە کردنی کۆراو ی زانیار یەکانی ئێو یە لە قونای یەکەم ئێمە ئێمە دوا هەلی ئێو یە بۆ بەردەوام بوون لە بەشدار ی کردنی ڕاپرسیە کە. تەکیە کلێک لە سەر ئێمە لێنکە ی خوار مە بەکە، گەر ڕێبار ی بەردەوامی بەشدار ی کردن دەدەیت.

<لێنک>

ڕۆژ یەك شەممە 24 ی ئازار دوا ڕۆژی بەشدار ی ڤیت بۆ بەشدار ی کردن ڤێش داخستنی ئێمە قونای و دەستێ کردنی قونای سێ یەم.

زۆر سوپاس بۆ کانت
یوسف خوشناو

Reminder Email Arabic Version Continued

أصدقاء: اسلام عليكم

شكراً لمشاركتكم في بحثنا، المرحلة الثانية للإستفتاء.
نحن و في غضون اسبوعين المقبلين سوف نرسل اليكم إيميلين آخرين للمشاركة في المرحلة التالية في بحثنا.
إذا انت من المشاركين الذين جاوبو على اسئلتنا في المرحلة الثانية في فترة الأسبوع الماضي . رجاءً تجاهل هذا الإيميل، لان هذا تذكير للذين لم يجابوا على الأسئلة في المرحلة الثانية.

أصدقاء

أنتم قد استقبلتوا إيميل في الاسبوع الماضي للاجابة على أسئلة المرحلة الثانية للإستفتاء والتي كانت مجمل معلوماتكم المعاد الينا في المرحلة الأولى .
هذه الايميل تكون اخر فرصة للإستمرار في المشاركة في البحث. رجاءً انقر على الرابط التالي إذا تقرر الإستمرار.

<رابط>

يوم الأحد 24 آذار تكون اخر يوم المشاركة قبل إغلاق هذه المرحلة والبدء بالمرحلة الثالثة .

شكراً للوقت
يوسف خوشناو

APPENDIX E
ROUND III EMAILS

First Email

Hello Collages...

Thank you for participating in our research in the first and second rounds.
If you did not accept our invitation and/or did not answer our questions in the first and second round surveys in the last month, please disregard the rest of this e-mail because this is the last round survey and this e-mail only for those who had participated in answering the questions in the first and second round surveys.

Collages...

Our third round survey is a collection of your information in the second round. We would like you to help us in ranking and validating the findings for the second time. In this round, the statements that received less than two-thirds of your agreement were excluded from the list. You will only rank and validate the statements that received more than two-thirds agreement.

For this purpose, a new survey is prepared for the this round.

Please click on the following link to begin ranking and validating each statement.

<link>

Thanks you very much for your valuable time.

Thank you for your time.

Yousif Khoshnaw

بهێزان: سلاتان لێییت

زۆر سوپاس بۆ بهشدار یکردنتان له قوناغی یهكهم و دووهمی تۆژینهوهكهمان. گەر تۆ بانگێشتهكهمانت قهبول نهكرد ههوه ها/یاخود بهشدار ی وهلام دانمهی پرسیایهكانی راپرسیهكهمانت نهكرد له ماوهی مانگی رابردوو له قوناغی یهكهم و دووهم، تكایه گرنگی بهێنمێله مهده، چونكه ئهمه دوا قوناغی وتێینهوهكهیه و تهنها بۆ ئهوانهیه كه له قوناغی یهكهم و دووهم دا بهژدرای وهلامدانمهیان كرد.

بهێزان . . .

قوناغی سێیهمی راپرسیهكهمان كۆكراوهی زانیاریهكانی ئۆمیه له قوناغی دووهم ئێمه ئهمانهی ئهم جاره یارمهتیمان بدهن به دووباره ریزبهند كردنی ئهم زانیاریانه بهی گرنگیان. لهم قوناغهدا ، ئهو دهستهوژانهی كه كهوتر له دوو له سهڕ بهی رهمانهندی ئۆوهی بهدهستهی نا له لیستهكاندا لابران ، و ئۆوه تهنها ئهو دهستهوژانه دووباره ریزبهند دهكهن كه زیاتر له دوو له سهڕ بهی رهمانهندی ئۆوهی بهدهستهی ناوه. بۆ ئهم مهیهسته راپرسیهکی نوێ تایبعت بهم قوناغه ئامادهكراوه. تكایه كلیك له سهڕ ئهم لینكهی خوارهوه بکه بۆ چوونه ناو ویب سایتی راپرسیهکه ورێزبهندی ههر دهستهوژمهك له بهرامبهڕ خۆیدا.

<لینك>

زۆر سوپاس بۆ کاتی بهی زت.

یوسف خوشناو

First Email Arabic Version Continued

أصدقاء: السلام عليكم

شكراً لمشاركتكم في بحثنا، مرحلتى الأولى والثانية للإستفتاء. إذا أنت لم تقبل دعوتنا و/أو لم تشارك في الإجابة على أسئلة إستفتائنا في فترة الشهر الماضي في مرحلتى الأولى والثانية. رجاءً تجاهل هذا الإيميل، لان هذه اخر المرحلة و هذا الإيميل فقط للذين شاركو في الإجابة في مرحلتى الأولى والثانية للإستفتاء.

أصدقاء

المرحلة الثالثة في استفتائنا هو مجمل معلوماتكم المرد إلينا في المرحلة الثانية، نحن نود منكم مساعدتنا بتقييم وتصنيف عباراتها حسب الأهمية وللمرة الثانية. في هذه المرحلة تم إبعاد العبارات التي لم تحصل على ثلث موافقاتكم في القائمة. انتم فقط تقيمون و تصنفون العبارات التي حصلت على ثلث موافقاتكم. لهذا الغرض، صممت إستفتاء جديد خاص بهذه المرحلة. رجاءً انقر على الرابط التالي للدخول الى صفحة الإستفتاء و بدء تقييم و تصنيف عباراتها

<رابط>

شكرا لوقتكم
يوسف خوشناو

Reminder Email

Hello collages...

Thank you for participating in our research in the second round.

If you are one of the participants who have answered our questions in the third round survey last week, please disregard this e-mail, because this is a reminder e-mail for those who did not answer our questions in the third round yet.

Our third round survey is collection of your information in the second round. We would like you to help us in ranking and validating the findings for the second time. In this round, the statements that received less than two-third of your agreement are excluded from the list. You will rank and validate the statements that received more than two-third agreement. This e-mail is your last chance to participate in third round survey. Please click on the following link to begin ranking and validating each statement.

<link>

Thank you very much for your valuable time.

Thank you for your time.

Yousif Khoshnaw

Reminder Email Kurdish Version Continued

بەڕێزان سڵاوێتان لێ ھێت . . .

. ڕاپرسیەکە زۆر سوپاس بۆ بەشداریکردنتان لە قوناغی دووەمی گەر تۆ بەشداری وەڵام دانەوێ پرستیایەکانی ڕاپرسیەکەمانت کرد لە ماوەی ھەفتەی ڕابردوو لە قوناغی سێیەم، تکایە گرنگی بەھێمئێڵە مەدە، چونکە ئەمە تەنھا ئێڵێ بیخستتەوێیە بۆ ئەو بۆی زانە کەھێشتا وەڵامی ڕاپرسیەکە قوناغی سێیەمیان نەداوەتەو.

بەڕێزان . . .

قوناغی سێیەمی ڕاپرسیەکەمان کۆکراوەی زانیاریەکانی ئێوەیە لە قوناغی دووھەم ئێمە ئەمانەوێ ئەم جارە یارمەتیمان بدەن بە دووبارە ریزبەندکردنی ئەم زانیاریانە بھێتی گرنگیان. لەم قوناغەدا ، ئەو دەستەواژانەی کە کەمتر لە دوو لە سەر سوێی رەزامەندی ئێوەی بەدەستھێنا لە لیستەکاندا لابراون ئێوە تەنھا ئەو دەستەواژانە دووبارە ریزبەند دەکەن کە زیاتر لە دوو لە سەر سوێی رەزامەندی ئێوەی بەدەستھێناوە. ئەم ئێڵە دوا ھێی ئێوەیە بۆ بەشداری کردنتان لە وەڵام دانەوێ قوناغی سێیەمی ڕاپرسیەکە . تکایە کلیک لەسەر ئەم لینکە خوارەو بکە بۆ چوونە ناو ویب سایتی ڕاپرسیەکە و ریزبەندکردنی ھەر دەستەواژەیک لە بەرامبەر خۆیدا.

<لینک>

زۆر سوپاس بۆ کانت
یوسف خۆشناو

Reminder Email Arabic Version Continued

أصدقاء: اسلام عليكم

شكراً لمشاركتكم في بحثنا، المرحلة الثانية للإستفتاء.
إذا انت من المشاركين الذين أجابوا على اسئلتنا في المرحلة الثالثة في فترة الأسبوع الماضي . رجاءً تجاهل هذا الإيميل، لان هذا تذكير للذين لم يجابوا على الأسئلة بد في المرحلة الثالثة.

أصدقاء

المرحلة الثالثة في استفتاءنا هو مجمع معلوماتكم المرد إلينا في المرحلة الثانية، نحن نود منكم مساعدتنا بتقييم وتصنيف عباراته احسب الأهمية للمرة الثانية. في هذه المرحلة تم إبعاد العبارات التي لم تحصل على ثلث موافقاتكم في القائمة. و انتم فقط تقيمون و تصنفون العبارات التي حصلت على ثلث موافقاتكم . هذه الايميل تكون اخر فرصة للمشاركة في المرحلة الثالثة للإستفتاء
رجاءً انقر على الرابط التالي للدخول على صفحة الاستفتاء و تقيم و تصنيف عباراتها.

<رابط>

يوح الأحد 24 آذار تكون اخر يوم المشاركة قبل إغلاق هذه المرحلة والبدء بالمرحلة الثالثة .

شكرا لوقتكم
يوسف خوشناو

APPENDIX F
ROUND I SURVEY QUESTIONNAIRE

Round I Survey Questionnaire

Please, select your language.

Arabic

☐

Kurdish

☐

“A Study to Assess Needed Improvements and Barriers in Planning and Delivering Agricultural Extension Activities in the Kurdistan region of Iraq”

Thank you for your participation in our survey on "“A Study to Assess Needed Improvements and Barriers in Planning and Delivering Agricultural Extension Activities in the Kurdistan region of Iraq.” **This study involves research designed to help us identify needed improvements in the Extension System in the KRG Region of Iraq, and help the researchers develop a plan to overcome barriers to meet these needed improvements.**

You can help us learn about the existing agricultural extension system in the Kurdistan region and potential limitations and barriers that may exist. The benefits to this study will be to assist the researchers and Extension leaders in the KRG to improve the current structure and programmatic efforts of the Extension Service.

You were chosen because you are an employee in the Ministry of Agricultural and Water resources KRG/Iraq, or extension agent familiar with and/or involved in extension programs in the Kurdistan region. Your participation is voluntary, but very important for this study because you can represent many other extension agents in the Kurdistan region. Your responses to this survey will be confidential to the extent permitted or required by law.

Thank you very much for your time!

Dr. Jeff Ripley, Assistant Professor and Extension Specialist at Texas A&M AgriLife Extension Service, and Mr. Yousif Khoshnaw, a graduate student in the Department of Agricultural Leadership, Education and Communications at Texas A&M University are conducting this study.

If you have questions related to your rights regarding this research, please contact the Institutional Review Board of Texas A&M University at 979-458-4067, or irb@tamu.edu.

If you choose to provide your input, you may begin the survey by clicking on "Yes".

This survey should take you approximately 5 minutes to complete. Once complete, you will receive two follow-up surveys to help validate and prioritize the responses received in the initial round.

Yes

☐

No

☐

Round I Survey Questionnaire Continued

1. What improvements are needed in the Extension system in the Kurdistan Region of Iraq to allow educators and staff to better serve clientele in communities and villages in the region?

1

2

3

4

5

2. What barriers exist that have limited you from achieving these improvements?

1

2

3

4

5

Thank you for your time, your responses will be combined with others, and returned to all participants to help in ranking and validating the findings.

Round I Survey Questionnaire Kurdish Version Continued

تکایہ زمانی گفتوگو هلائی ره

العربية

گوردی

O

O

وێژ نەو مەهەك بۆ هەڵسەنگاندنی پلان و گەياندنی چالاكیەكانی پێنمای كشتوكێلی لە هەوێمی كوردستانی عێراق،
 “پێن و بێستەكانی گەشی پێدان و كۆسەكان

سوپاس بۆ بەشدارى كردن له راپرسى ”قۆنژىنەمىيەك بۆ ھەلسەنگەندى پلان و گەياندى چالاكىيەكانى ئىنمى
نەتوئۆنژىنەمىيەك نەخشەيەك ” كشتوكلى له ھۆنى كوردستانى عىراق پۆنويستىيەكانى گەشپىدان و كۆسپەكان
له خۆ دەگۆت كە يارمەتى ئىمە دەدات له ديارى كردنى پۆنويستىيەكانى گەشپىدانى سىستەمى ئىنمىيە كشتوكلى
ھۆنى كوردستانى عىراق، ھەروەھا يارمەتى ئىمە دەدات بۆ گەشپىدانى پلان كى دياركراو بۆ زۆبون له
بەسەر كۆسپەكان بە مەبەستى گەشتن پۆنويستىيەكانى گەشەكردنى سىستەمى ئىنمىيە كشتوكلى. سودى ئىم
توئۆنژىنەمىيەك نەمىيەك دەپتە نامزائىك بۆ يارمەتى دانى توئۆنژىرەن و بىر يار بە دەستانى ئىنمىيەك له ھەنى
كوردستان بۆ گەشپىدانى پۆنكەتە ئىستاي بەرنامەى كارى خزمەتگوزارى ئىنمىيەك كشتوكلى
ئۆو دەتوانن يارمەتى ئىمە بەدەن فۆر بىن له بارەى سىستەمى ئىستاي ئىنمىيەك كشتوكلى له ھۆنى كوردستان و ئىم
كۆسپەكانى كەپتە شىخستى ديارى دەكات. سودى ئىم قۆنژىنەمىيەك نەمىيەك دەپتە نامزائىك بۆ يارمەتى دانى توئۆنژىرەن
و كار بە دەستانى ئىنمىيەك له ھۆنى كوردستان بۆ گەشپىدانى پۆنكەتە ئىستاي بەرنامەى كارى خزمەتگوزارى
ئىنمىيەك كشتوكلى

[illegible]

گھر تو بربار دھدی بھشاری بکھی له راپرسی نهم وئی ژینهمویه، تکاییه کرت ته بکه لسمسر (بائی). بۆ تمواوکردنی راپرسیمه که تنهنا نزیکهی ده تا پازده دقیقه دمخاییت. له دها تودا دوو نیولی تری بیک بھدوای بیک ومکو بھدواداچون بۆ ئهو راپرسیه ومرده گریت بۆ ئهوی حایکی تر یارمهتی بدهی له ریز بھندکردنی ئهو زانیاریاهی لهر راپرسیه دهستما دهکویت

نکیر

بہی

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Round I Survey Questionnaire Kurdish Version Continued

نەو گەشەسەندنانە چين كەپئ وىستن بۆيئ شخستنى سىستەمى ئىنمايى كشتوكلى ھوئى مى كوردستان تاكو
كارمەندان و ستافى ئىنمايى بتوانن باشتر خزمەتى جووتياران بكەن لە گوندەكان ولە كۆمى گەكانى دانىشتوان
لە ھەيئى مى كوردستان

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نەو كۆسپانە چين لەبەردەمى تۆ كە ھوئى تۆ لە گەشەيئ دانى ئىنمايى كشتوكلى دوا دەخات

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زۆر سوپاس بۆ كاتت , لە داھاتوودا دوو ئىيئى تری يەك بەدواى يەك وەكو بەدواداچوون بۆ نەو راپرسىيە
وەردەگريت بۆ نەو ەى جائىكى تر يارمەتى بەدى لە ريزبەندکردنى نەو زانیاریاى لەم راپرسىيە دەستما دەكوئت

Round I Survey Questionnaire Arabic Version Continued

رجاء أختار لغة الحوار

العربية

كوردی



دراسة لتقييم التحسينات المطلوبة والموانع في تخطيط وتنفيذ أنشطة الإرشاد الزراعي في إقليم كردستان العراق

دراسة لتقييم التحسينات المطلوبة والموانع في تخطيط وتنفيذ أنشطة "نشركم على مشاركتكم في هذا المسح تشتمل هذه الدراسة على بحث مصمم لمساعدتنا في تحديد "الإرشاد الزراعي في إقليم كردستان العراق التحسينات المطلوبة في منظومة الإرشاد في إقليم كردستان العراق، ومساعدة الباحثين في تطوير خطة لتجاوز الموانع ومن ثم تحقيق التحسينات المطلوبة

يمكنك مساعدتنا للتعرف على منظومة الإرشاد الزراعي الحالية في إقليم كردستان والمحددات والموانع المحتملة والتي قد تكون موجودة أصلاً. الفوائد من هذه الدراسة هي مساعدة الباحثين وقادة الإرشاد في حكومة إقليم كردستان في تحسين الهيكل الحالي وجهود وضع البرامج للخدمة الإرشادية

لقد تم اختيارك لأنك موظف في وزارة الزراعة والموارد المائية في حكومة إقليم كردستان / العراق، أو لأنك مرشد زراعي و/أو لكونك مشارك في برامج الإرشاد في إقليم كردستان. إن مشاركتك طوعية، ولكنها مهمة جداً لهذه الدراسة لأنك تمثل العديد من المرشدين الآخرين في إقليم كردستان. استجابتك لهذا المسح ستكون سرية بحدود القانون. إشكرا جزيلاً على وقتك

كل من الدكتور جيف ريبلي، أستاذ مساعد ومتخصص بالإرشاد في خدمة أكريليف الارشادية في جامعة تكساس أي أند أم، والسيد يوسف خوشناو، طالب دراسات عليا في قسم القيادة والتعليم والاتصالات الزراعية في جامعة تكساس أي أند أم هما القائمان على هذه الدراسة

إذا كانت لديك أية أسئلة حول حقوقك بخصوص هذا البحث، يرجى الاتصال بمجلس المراجعة المؤسسي في جامعة irb@tamu.edu. تكساس أي أند أم على الرقم 4067-458-979 أو على البريد الإلكتروني

إذا وافقت على المساهمة، يمكنك البدء في المسح عن طريق النقر على "نعم" سوف يستغرق منك هذا المسح حوالي 5 دقائق لإكماله. بعد الانتهاء، سوف تستلم مسحين آخرين للمتابعة والمساعدة في التحقق من صحة المدخلات وترتيب الأولويات من خلال الردود الواردة من المسح الأولي

لا

نعم



Round I Survey Questionnaire Arabic Version Continued

ماهي التحسينات المطلوبة في منظومة الإرشاد في إقليم كردستان العراق من اجل السماح للمعلمين والكادر في تقديم خدمة بشكل أفضل للزبائن في المجتمعات والقرى في الاقليم؟

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ماهي الموانع الموجودة والتي تؤخر عن تحقيق هذه التحسينات؟

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شكرا لك على وقتك، سيتم تجميع ردودك وردود الآخرين وإعادتها لجميع المشاركين للمساعدة في الترتيب

والتحقق من صحة النتائج

APPENDIX G
ROUND II SURVEY QUESTIONNAIRE

Round II Survey Questionnaire

Please, select your language.

Arabic
☐

Kurdish
☐

I am one of the participants in Round I.

Yes
☐

No
☐

These statements are needed improvements in planning extension activities in the Kurdistan region. These are a collection of your information from the first round survey; please rate each of them according to your best information.

	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
participating experts in developed countries in extension trainings and research	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extension agents need to empower themselves with knowledge and information about extension activities they do	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using new technology in extension activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strengthening relationship between extension and research	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identifying farmers' issues and needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Performing field experiments in farmers' fields and demonstrating the results in extension activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Involving field demonstration method in extension activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Providing transportation for extension agents to deliver extension activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Round II Survey Questionnaire Continued

Involving farmers in planning extension activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increase the education level of administrative and technical staff in extension offices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Giving higher level of authority to district and sub-district extension offices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reducing bureaucracy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Providing research centers with scientific resources, such as access to journals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extensive training course for extension in different fields in the KRG	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increasing extensive extension training courses for extension agents in developed countries in different fields	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supplying extension centers with equipment and building laboratories	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increasing authority of extension agents who work in lower levels in the structure of extension department	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conducting more applied research in research centers in different fields	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Involving private sector in delivering extension services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Developing extension activities to an appropriate level for farmers' knowledge and needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extension agents need to pay attention to restoring the trust between extension department and farmers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Round II Survey Questionnaire Continued

Giving bigger role to media in delivering extension activity news	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
participating experts in developed countries in extension trainings and research	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extension agents need to empower themselves with knowledge and information about extension activities they do	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using new technology in extension activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strengthening relationship between extension and research	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

These statements are barriers in planning extension activities in the Kurdistan region. These are a collection of your information from the first round survey; please rate each of them according to your best information.

	Strongly Agree	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Strongly Disagree
Inappropriate structure of extension department	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Corruption in administration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Political views of Extension administration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of long term strategic plan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of disciplinary plan consisting of different types of extension activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of cooperative organizations helping in extension activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of MOAWR's interest in improving extension activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of authority for extension agents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Loss of trust between extension department and farmers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Round II Survey Questionnaire Continued

Lack of support from media in delivering extension information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of extensive training courses in different fields of extension activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of connection between research and extension	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shortage of extension agents for doing extension activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Weakness in communication between administration, extension agents, and farmers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Timing issue in delivering extension activities, and providing support needed to extension agents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of financial support	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of transportation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Too much bureaucracy between MOAWR, extension administration, and extension workers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of motivation and encouragement from MOAWR to extension agents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of scientific resources about (specify) extension activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulty in obtaining new technology for using in extension activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of research in different fields of extension activities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of knowledge, information, and skills about different fields of agricultural science by extension agents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Thank you very much for your participation. We will be back to you in next two weeks to participate in the third round.

Round II Survey Questionnaire Kurdish version Continued

○	○	○	○	○	○	پندانی دهسه‌لانی زیاتر به نویسنده‌کافی پندانی له قضا و ناحیه‌کان
○	○	○	○	○	○	کام کرده‌وی پروتینیات
○	○	○	○	○	○	کرده‌وی نویسنده‌ی پندانی له گونه‌کان
○	○	○	○	○	○	کارکردنی کادیرانی پندانی بؤ به‌ز کرده‌وی ناستی زانیاری و توانایان له باره‌ی چالاکیه‌کافی پندانی
○	○	○	○	○	○	کارکردنی کادیرانی پندانی له‌سه‌ر قزانه‌وی متمانه‌ی جوتیاران
○	○	○	○	○	○	پل‌پشتی کردنی سه‌نتره‌کافی پندانی به دابین کردنی کمره‌سته‌ی تاقی‌گه‌کان
○	○	○	○	○	○	نه‌نجامدانی تهرژینه‌وی تاقیکاری جیاجیا (البحوث التطبيقية المختلفة) له چالاکیه‌کافی پندانی له سه‌نتره‌کافی ته‌ژینه‌وی
○	○	○	○	○	○	دابین کردنی سه‌رچاوه‌ی زانستی بؤ سه‌نتره‌کافی تهرژینه‌وی، به‌نمونه گه‌پشتن به‌گوفاره‌ی زانستیه‌کان
○	○	○	○	○	○	به‌ژداری پندانی شاره‌زانی و ولاتانی پندانه‌وتوو له‌خوله‌کافی راه‌نان و ته‌ژینه‌وی‌کان
○	○	○	○	○	○	کرده‌وی خولی جیاجیای راه‌نانی چر بؤ کادیرانی پندانی له‌ناوه‌وی هلم
○	○	○	○	○	○	به‌کاره‌نانی ته‌کنه‌لوجیای نوئ له چالاکیه‌کافی پندانی
○	○	○	○	○	○	به‌ه‌ز کردنی همه‌ماه‌نگی فوان پندانی و ته‌ژینه‌وی
○	○	○	○	○	○	کرده‌وی خولی جیاجیای راه‌نانی چر بؤ کادیرانی پندانی له‌دوره‌وی هلم
○	○	○	○	○	○	به‌شداره‌ی پندانی کهرتی تاییه‌ت له چالاکیه‌کافی پندانی

نەم دەستەواژانەى خواروھە كۆسيھەكانى بەردەمى گەشەندەنى چالاكىھەكانى ئۆنمايى كشتوكلىن لە ھەئەمى كوردستان، ھەموو دەستەواژەكان كۆكراوھە زانىيارىھەكانى ئۆون لە قۇناغى يەكەمى راپرسىھەكدا ، تەكايە بە ھەي باشترين شارەزايت ھەر دەستەواژەيەك ھەي بىسەنگە.

بىخەۋەرلىك ھۆججەتلىرى	ھۆججەتلىرى	تەكشۈرۈلگەن ھۆججەتلىرى	تەكشۈرۈلگەن ھۆججەتلىرى	ھۆججەتلىرى	ھۆججەتلىرى
بىخەۋەرلىك ھۆججەتلىرى	ھۆججەتلىرى	تەكشۈرۈلگەن ھۆججەتلىرى	تەكشۈرۈلگەن ھۆججەتلىرى	ھۆججەتلىرى	ھۆججەتلىرى
بىخەۋەرلىك ھۆججەتلىرى	ھۆججەتلىرى	تەكشۈرۈلگەن ھۆججەتلىرى	تەكشۈرۈلگەن ھۆججەتلىرى	ھۆججەتلىرى	ھۆججەتلىرى
بىخەۋەرلىك ھۆججەتلىرى	ھۆججەتلىرى	تەكشۈرۈلگەن ھۆججەتلىرى	تەكشۈرۈلگەن ھۆججەتلىرى	ھۆججەتلىرى	ھۆججەتلىرى

Round II Survey Questionnaire Kurdish version Continued

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	نەبونی پلانی ستراتیجی دین ژخایەن
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	نەبونی پلانی گشتگیر کە چالاکیه جیاچیاکانی پێنمایی لە خۆ بگرت
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	کەمی کۆماری هەر هەژیهکان کە هاوبەشی بکەن لە نەجامدانی چالاکیهکانی پێنمایی
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	کەمی گرنگی دانی وەزارەت بۆ چاکترکردنی چالاکیهکانی پێنمایی
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	کەمی دەسەلاتی کادیرانی پێنمایی
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	وون بونی متمانە لە نیوان جوتیاران و کادیرانی پێنمایی
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	کەمی پلپشتی راگەیانندی گشتی لە گەیانندی زانیاریەکانی پێنمایی
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	کەمی خۆلەکانی راڤەنانی چڕ لە بوارە جیاوازهکانی چالاکیهکانی پێنمایی
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	لاواری هاوبەندی فووان تهرژینهوهکان و پێنماییەکان
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	کەمی ژمارە کادیرانی پێنمایی بۆ نەجامدانی چالاکیهکان
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	لاواری پەپوەندی فووان بەپێوەبەراییەتی پێنمایی، کادیرانی پێنمایی، و جوتیاران
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	نەگەشتی پلپشتی دارایی پێویست بۆ نەجامدانی چالاکیهکان لە کاتی خۆیدا
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	کەمی پلپشتی دارایی بۆ چالاکیهکان
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	کەمی هۆکاری گواستەوه بۆ نەجامدانی چالاکیهکان
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	فۆرسی رۆتینیات لە فووان وەزارەت، بەپێوەبەراییەتی پێنماییەکان، و کادیرانی پێنمایی
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	کەمی هاتنان و هاتنان لە لایەن وەزارەت بۆ کادیرانی پێنمایی
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	کەمی سەرچاوەکانی زانیاری تایبەت بە چالاکیهکانی پێنمایی
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	گرانی دەستکەوتنی تەکنەلۆجیای نوێ بۆ بەکارهێنانی لە چالاکیهکانی پێنمایی
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	کەمی قۆژینهوه لە بوارە جیاوازهکان بۆ پلپشتی چالاکیهکانی پێنمایی

زۆر سوپاس بۆ کات، لە ماوەی دوو هەفتەی داهاوودا دەگەڕێنەوه لای بەئێرت بۆ بەشداری کردن لە قوناغی سێ یەم و کۆتایی تهرژینهوهکەمان . تکایە لەگەڵمان بێنە .

Round II Survey Questionnaire Arabic version Continued

رجاء إختار لغة المحادثة

گوردی

العربية

أنا من المشاركين في المرحلة الأولى في هذا الاستفتاء ؟

نعم

4

البيانات التالية التحسينات المطلوبة لتطوير نشاطات الإرشاد الزراعي في إقليم كردستان ، كل العبارات هي مجمل معلوماتكم المعاد إلينا في المرحلة الأولى في الاستفتاء ، رجاء قيم العبارات حسب أفضل خبرتيك .

[illegible]

Round II Survey Questionnaire Arabic version Continued

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	عمل الكوادر الإرشادية على رفع مستوى معلوماتهم و معرفتهم حول الأنشطة الإرشادية
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	عمل الكوادر الإرشادية على إعادة ثقة الفلاحين
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	دعم المراكز الإرشادية بتوفير المعدات والمختبرات
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	إجراء البحوث التطبيقية المختلفة في الأنشطة الإرشادية في المراكز البحوث
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	تزويد المراكز البحوث بالمصادر العلمية ، مثلا وصول إلى المجلات العلمية
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	إشراك خبراء الدول المتقدمة في الدورات التدريبية والأبحاث
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	فتح الدورات التدريبية المختلفة والمكثفة للكوادر الإرشادية في داخل الإقليم
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	إستخدام التكنولوجيا الحديثة في الأنشطة الإرشادية
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	تقوية العلاقة بين الإرشاد والبحوث
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	فتح الدورات التدريبية المختلفة والمكثفة للكوادر الإرشادية في خارج الإقليم
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	مشاركة القطاع الخاص في الأنشطة الإرشادية

البيانات التالية هي الموانع الموجودة لتطوير نشاطات الإرشاد الزراعي في إقليم كوردستان ، كل العبارات هي مجمل معلوماتكم المعاد إلينا في المرحلة الأولى في الإستفتاء ، رجاء قيم العبارات حسب أفضل خبرتيك .

زور راسته	راسته	تارادميكه راسته	تارادميكه راسته	راسته نيه	همرگيز راسته نيه	
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	عدم وجود الهيكل المناسب لمنظومة الإرشاد
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	الفساد الإداري
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	الإعتبار لإنتماءات سياسيه معينة في الإدارة الإرشادية
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	عدم وجود خطة إستراتيجية بعيدة المدى
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	عدم وجود خطة شاملة بحيث يحوي الأنشطة الإرشادية المختلفة
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	قلة الجمعيات التعاونية التي تساهم في أداء الأنشطة الإرشادية
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	قلة إهتمام الوزارة في تحسين الأنشطة الإرشادية
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	قلة صلاحيات الكوادر الإرشادية
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	فقدان الثقة بين الفلاحين و الكوادر الإرشادية
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	قلة الدعم الإعلام العام في إيصال المعلومات الإرشادية

Round II Survey Questionnaire Arabic Version Continued

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	قلة الدورات التدريبية المكثفة في مجالات مختلفة في الأنشطة الإرشادية
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ضعف الارتباط بين البحوث والإرشاد
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	نقص في الكوادر الإرشادية لأداء الأنشطة
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ضعف الاتصال بين الإدارة الإرشادية والكوادر الإرشادية والفلاحين
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	عدم وصول الدعم المالي اللازم لأداء الأنشطة في الوقت المناسب
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	قلة الدعم المالي للأنشطة
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	قلة وسائل النقل لأداء الأنشطة
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	ثقل الروتينيات بين الوزارة والإدارة الإرشادية والكوادر الإرشادية
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	قلة التشجيع والحوافز من قبل الوزارة للكوادر الإرشادية
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	قلة المصادر العلمية الخاصة بالأنشطة الإرشادية
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	صعوبة الحصول على التكنولوجيا الحديثة لإستخدامها في الأنشطة الإرشادية
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	قلة البحوث في مجالات مختلفة تدعم الأنشطة الإرشادية

شكرا لوقتكم ، سوف نعود إليكم في فترة أسبوعين قادمين للمشاركة في المرحلة الثالثة والأخيرة في دراستنا ، رجاء ابق معنا .

APPENDIX H
ROUND II QUESTIONNAIRE RESULTS

Needed Improvements Questionnaire and Results

Frequency for agreement levels for needed improvements in planning extension activities, round two (n=14)

Items	Strongly Agree		Agree		Somewhat Agree		Somewhat Disagree		Disagree		Strongly Disagree	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Developing extension activities to an appropriate level for farmers' knowledge and needs	5	36	5	36	3	21	1	7	0	0	0	0
Identifying farmers' issues and needs	7	50	5	36	1	7	1	7	0	0	0	0
Supervising farmers' farms by extension agents	4	31	4	31	2	15	0	0	3	23	0	0
Performing field experiments in farmers' fields and demonstrating the results in extension activities	10	71	2	14	1	7	0	0.0	1	7	0	0
Involving field demonstration method in extension activities	6	43	6	43	1	7	0	0	1	7	0	0
Involving extension agents in field work as extension activities	6	43	2	14	3	21	2	14	1	7	0	0
Involving farmers field school method in extension activities	3	21	6	43	3	21	1	7	1	7	0	0.0
Providing transportation for extension agents to deliver extension activities	9	64	3	21	1	7	1	7	0	0	0	0
Involving farmers in planning extension activities	5	36	7	50	1	7	0	0	1	7	0	0

Needed Improvements Questionnaire and Results Continued

Giving bigger role to media in delivering extension activity news	6	46	4	31	2	15	1	8	0	0	0	0
Giving more important role to the extension department in administration, authority, and budget by MOWAR	6	43	3	21	3	21	1	7	1	7	0	0
Increasing authority of extension agents who work in lower levels in the structure of extension department	4	29	7	50	1	7	1	7	1	7	0	0
Increase the education level of administrative and technical staff in extension offices	7	50	5	36	1	7	0	0	1	7	0	0
Giving higher level of authority to district and sub-district extension offices	7	50	5	36	1	7	1	7	0	0	0	0
Reducing bureaucracy	11	79	1	7	1	7	0	0	1	7	0	0
Opening more extension offices in villages	3	25	4	33	2	17	2	17	1	8	0	0
Extension agents need to empower themselves with knowledge and information about extension activities they do	5	35	8	57	1	7	0	0	0	0	0	0
Extension agents need to pay attention to restoring the trust between extension department and farmers	7	54	3	23	2	15	1	8	0	0	0	0
Supplying extension centers with equipment and building laboratories	7	50	4	29	1	7	1	7	1	7	0	0

Needed Improvements Questionnaire and Results Continued

Conducting more applied research in research centers in different fields	6	43	5	36	2	14	0	0	1	7	0	0
Providing research centers with scientific resources, such as access to journals	6	43	6	43	2	14	0	0	0	0	0	0
participating experts in developed countries in extension trainings and research	10	71	4	29	0	0	0	0	0	0	0	0
Extensive training course for extension in different fields in the KRG	10	71	2	14	2	14	0	0	0	0	0	0
Using new technology in extension activities	10	71	3	21	1	7	0	0	0	0	0	0
Strengthening relationship between extension and research	9	64	4	29	1	7	0	0	0	0	0	0
Increasing extensive extension training courses for extension agents in developed countries in different fields	7	50	5	36	1	7	1	7	0	0	0	0
Involving private sector in delivering extension services	7	50	4	29	2	14	0	0	1	7	0	0

Barriers Questionnaire and Results

Frequency for agreement levels for barriers in planning extension activities, round two (n=14)

Items	Strongly Agree		Agree		Somewhat Agree		Somewhat Disagree		Disagree		Strongly Disagree	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Inappropriate structure of extension department	7	50	7	50	0	0	0	0	0	0	0	0
Corruption in administration	7	50	2	14	3	21	2	14	0	0	0	0
Political views of Extension administration	5	36	5	36	2	14	0	0	1	7	1	7
Lack of long term strategic plan	11	79	1	7	2	14	0	0	0	0	0	0
Lack of disciplinary plan consisting of different types of extension activities	2	14	10	71	1	7	0	0	1	7	0	0
Lack of cooperative organizations helping in extension activities	2	14	8	57	3	21	1	7	0	0	0	0
Lack of MOAWR's interest in improving extension activities	7	50	5	36	2	14	0	0	0	0	0	0
Lack of authority for extension agents	5	36	7	50	1	7	1	7	0	0	0	0
Loss of trust between extension department and farmers	6	43	4	29	3	21	1	7	0	0	0	0
Lack of support from media in delivering extension information	5	38	3	23	4	31	1	8	0	0	0	0
Lack of extensive training courses in different fields of extension activities	4	29	9	64	0	0	1	7	0	0	0	0

Barriers Questionnaire and Results Continued

Lack of connection between research and extension	6	43	7	50	1	7	0	0	0	0	0	0
Shortage of extension agents for doing extension activities	3	23	3	23	4	31	3	23	0	0	0	0
Weakness in communication between administration, extension agents, and farmers	4	29	6	43	3	21	1	7	0	0	0	0
Timing issue in delivering extension activities, and providing support needed to extension agents	10	77	3	23	0	0	0	0	0	0	0	0
Lack of financial support	9	69	2	15	1	8	1	8	0	0	0	0
Lack of transportation	7	50	4	29	2	14	0	0	1	7	0	0
Too much bureaucracy between MOAWR, extension administration, and extension workers	12	86	1	7	1	7	0	0	0	0	0	0
Lack of motivation and encouragement from MOAWR to extension agents	5	36	8	57	0	0	1	7	0	0	0	0
Lack of scientific resources about (specify) extension activities	4	29	10	71	0	0	0	0	0	0	0	0
Difficulty in obtaining new technology for using in extension activities	6	43	4	29	2	14	2	14	0	0	0	0
Lack of research in different fields of extension activities	1	7	10	71	1	7	1	7	1	7	0	0

Barriers Questionnaire and Results Continued

Lack of knowledge, information, and skills about different fields of agricultural science by extension agents	4	29	7	50	3	21	0	0	0	0	0	0
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APPENDIX I
ROUND III QUESTIONNAIRE RESULTS

Needed Improvements Questionnaire and Results

Frequency for agreement levels for needed improvements in planning extension activities, round three (n=14)

Items	Strongly Agree		Agree		Somewhat Agree		Somewhat Disagree		Disagree		Strongly Disagree	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Developing extension activities to an appropriate level for farmers' knowledge and needs	9	64	2	14	3	21	0	0	0	0	0	0
Identifying farmers' issues and needs	10	71	3	21	1	7	0	0	0	0	0	0
Performing field experiments in farmers' fields and demonstrating the results in extension activities	10	71	3	21	0	0	1	7	0	0	0	0
Involving field demonstration method in extension activities	7	50	6	43	1	7	0	0	0	0	0	0
Providing transportation for extension agents to deliver extension activities	8	57	3	21	3	21	0	0	0	0	0	0
Involving farmers in planning extension activities	4	29	7	50	1	7	2	14	0	0	0	0
Giving bigger role to media in delivering extension activity news	8	57	4	29	1	7	1	7	0	0	0	0
Increasing authority of extension agents who work in lower levels in the structure of extension department	4	29	7	50	3	21	0	0	0	0	0	0
Increase the education level of administrative and technical staff in extension offices	9	64	5	36	0	0	0	0	0	0	0	0

Needed Improvements Questionnaire and Results Continued

Giving higher level of authority to district and sub-district extension offices	4	29	9	64	1	7	0	0	0	0	0	0
Reducing bureaucracy	11	78.6	2	14	1	7	0	0	0	0	0	0
Extension agents need to empower themselves with knowledge and information about extension activities they do	8	57	5	36	1	7	0	0	0	0	0	0
Extension agents need to pay attention to restoring the trust between extension department and farmers	9	64	4	29	1	7	0	0	0	0	0	0
Supplying extension centers with equipment and building laboratories	9	69.2	3	23.1	0	0	1	8	0	0	0	0
Conducting more applied research in research centers in different fields	7	50	4	29	0	0	2	14	1	7	0	0
Providing research centers with scientific resources, such as access to journals	5	36	6	43	2	14	1	7	0	0	0	0
participating experts in developed countries in extension trainings and research	8	57	4	29	2	14	0	0	0	0	0	0
Extensive training course for extension in different fields in the KRG	10	71	2	14	2	14	0	0	0	0	0	0
Using new technology in extension activities	10	71	1	7	3	21	0	0	0	0	0	0
Strengthening relationship between extension and research	12	86	2	14	0	0	0	0	0	0	0	0

Needed Improvements Questionnaire and Results Continued

Increasing extensive extension training courses for extension agents in developed countries in different fields	7	50	5	36	2	14	0	0	0	0	0	0
Involving private sector in delivering extension services	6	43	6	43	2	14	0	0	0	0	0	0

Barriers Questionnaire and Results

Frequency for agreement levels for barriers in planning extension activities, round three (n=14)

Items	Strongly Agree		Agree		Somewhat Agree		Somewhat Disagree		Disagree		Strongly Disagree	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Inappropriate structure of extension department	9	64	5	36	0	0	0	0	0	0	0	0
Political views of Extension administration	7	50	3	21	2	14	0	0	1	7	1	7
Lack of long term strategic plan	10	71	2	14	1	7	0	0	1	7	0	0
Lack of disciplinary plan consisting of different types of extension activities	6	43	7	50	1	7	0	0	0	0	0	0
Lack of cooperative organizations helping in extension activities	5	36	8	57	1	7	0	0	0	0	0	0
Lack of MOAWR's interest in improving extension activities	4	29	8	57	2	14	0	0	0	0	0	0
Lack of authority for extension agents	6	43	6	43	2	14	0	0	0	0	0	0
Loss of trust between extension department and farmers	5	36	7	50	2	14	0	0	0	0	0	0
Lack of extensive training courses in different fields of extension activities	6	43	7	50	1	7	0	0	0	0	0	0
Lack of connection between research and extension	7	50	6	43	1	7	0	0	0	0	0	0
Weakness in communication between administration, extension agents, and farmers	4	29	6	43	4	29	0	0	0	0	0	0

Barriers Questionnaire and Results Continued

Timing issue in delivering extension activities, and providing support needed to extension agents	9	64	5	36	0	0	0	0	0	0	0	0
Lack of financial support	8	57	6	43	0	0	0	0	0	0	0	0
Lack of transportation	8	57	4	29	2	14	0	0	0	0	0	0
Too much bureaucracy between MOAWR, extension administration, and extension workers	8	57	3	21	2	14	1	7	0	0	0	0
Lack of motivation and encouragement from MOAWR to extension agents	4	31	7	54	1	8	1	8	0	0	0	0
Lack of scientific resources about (specify) extension activities	5	38.5	4	31	2	15	2	15	0	0	0	0
Difficulty in obtaining new technology for using in extension activities	6	43	3	21	2	14	3	21	0	0	0	0
Lack of research in different fields of extension activities	4	29	7	50	2	14	1	7	0	0	0	0
Lack of knowledge, information, and skills about different fields of agricultural science by extension agents	4	29	6	43	3	21	1	7	0	0	0	0

APPENDIX J

NEEDED IMPROVEMENTS AND BARRIERS' STATEMENTS

Needed Improvements Statements

1. Establish a rehabilitation center for extension agents supplied with new technology
2. Set up a special media center to introduce the importance of the local agricultural sector and to educate farmers
3. Opening educational and training seminars for educators and farmers
4. Financial support
5. Restructuring of the agricultural extension system based on recent research
6. Changing the structure of administrative and executive of the extension system in Kurdistan
7. Identifying problems and requirements of the agricultural sector
8. Provide the requirements needed in facilitating the process of extension and delivering service
9. make a field survey to find the scientific and knowledge levels for farmers and recipients
10. Study all cases individually and choose appropriate extension programs
11. Agricultural extension planning and policy
12. Develop programs according to the needs areas
13. Structure a new and moderate administration
14. Allocate a sufficient and adequate budget
15. Develop a plan of action adequate to the current circumstance of extension
16. Develop a strategy plan for five years period
17. Attention to those who are interested in extension
18. Agricultural courses for extension agents

Needed Improvements Statements Continued

19. Reduce bureaucracy in the Ministry of Agriculture's offices
20. Search for resources and new technology for developing agriculture in Iraq
21. Insure transportation means for agricultural extension employees
22. Provide Appliances and tools for the research centers
23. Agricultural course for extension agents to increase experience and information
24. Demonstrate and transfer new technology in developed countries to farmers
25. Facilitate for transfer new information for farmers in every developmental aspect
26. Improvement by extensive research
27. Transfer the research results to real world by extension agents
28. Train farmers with the latest results of researches
29. Improvement in the mechanism of dealing with the types of product and types of land
30. Improvement in environment
31. Up to now, there is no extension system in the Kurdistan region to provide services for clients
32. authority and financial needed to extension agents in extension activities to be able to show efforts to visit farmers and solve the problems
33. Provide transportation means and communication means to extension agents to know about the problems
34. The extension system should incorporate with high education to transfer the information from thesis and dissertation to the fields
35. Work on opening training courses in Europeans countries and USA in order to transfer new technology and rebuild the trust between farmers and extension agents

Needed Improvements Statements Continued

36. Transportation means – provide transportation needed for extension agents
37. Provide the necessary services to villages, such as electricity.
38. Establish a board for farmers in each village to identify needs and form a vision for future.
39. Increase number of extension agents for each village
40. Agricultural courses for employees
41. Field demonstration
42. Increase authority of employees
43. Increase authority of districts and sub-districts
44. Develop extension activities to an appropriate level for farmers
45. Bring a new system from developed countries
46. Provide extension activities by expertise
47. Farmers should show up everyday
48. More attention to extension by ministry of agriculture and government
49. Reorganize extension office in the Kurdistan region
50. prepare extension programs for the Kurdistan region to an appropriate level for farmers' knowledge and issues
51. strengthen cooperation between universities and ministry of agriculture in extension field
52. restore trust between farmers and extension agents
53. laboratories
54. read agricultural journals
55. visit foreign countries

Needed Improvements Statements Continued

- 56. regular visit to villages by agricultural experts and provide villagers' needs
- 57. supervise agricultural engineers on farmers' farms
- 58. restore trust between farmers and extension agricultural engineers

Needed Improvements Statements Continued

- 59. receive needs from governments for farmers
- 60. revitalize science in farmers' fields
- 61. closer relation between extension agents and research
- 62. Extension agents' follow-up with farmers' issues
- 63. Extension agents must empower themselves with knowledge and information about agricultural science
- 64. Extension agents must pay attention to social and economic services for farmers
- 65. Bring new technology from developed countries to develop agricultural sector and increase products
- 66. Bring experts from developed countries to train extension agents and researchers
- 67. Provide transportation means by government
- 68. Bring new technology to improve agricultural sector
- 69. Open extension and research course by foreign experts
- 70. Provide transportation means
- 71. Pay attention to quality control
- 72. more cooperation with extension agents and researchers from research centers
- 73. courses for employees
- 74. send extension agents to foreign countries to transfer new technology

Needed Improvements Statements Continued

- 75. field-work
- 76. build relationship between farmers and agricultural staff
- 77. have strategic plan to produce more agricultural products

Needed Improvements Statements Continued

- 78. inform farmers about scientific use of pesticides and its side effects
- 79. Support farmers that are settling in their villages and lands
- 80. Change the structure of extension administration, it means giving independent administration and accounting to extension sector
- 81. Allocate a needed yearly budget for extension
- 82. Provide transportation means like cars
- 83. More training courses for extension agents
- 84. more collaboration between agricultural research and universities
- 85. an appropriate structure for the extension system in the Kurdistan region
- 86. cooperation between extension and research
- 87. Increase extension agents knowledge
- 88. Involve private sector in extension
- 89. prepare extension activity plans from cooperation with farmers
- 90. build technical and administrative structure of extension by relying on employees who have bachelor degrees or higher and extension majors
- 91. train farmers using farmers field school method
- 92. cooperate with farmers in field demonstration, for example cultivating fruit trees on the fence, grape on the fence, and providing apiaries.
- 93. Increase extension offices in all areas of the governorates in Kurdistan

94. Needed Improvements Statements Continued

- 95. Open extensive training courses in and outside the country in all areas of agriculture
- 96. Perform field experiments in farmers' farms and demonstrate them to other farmers
- 97. Use new methods in cultivation, and conversation with farmers
- 98. Perform group projects between farmers and extension staff
- 99. Open small extension offices in villages for delivering information between farmers and extension staff
- 100. Investigate about farmers issues and solutions
- 101. Introduce new methods by providing advanced courses
- 102. Bring experts in different fields to work directly with extension staff and agents
- 103. Demonstrate the successful results of the new ways of agriculture

Barriers Statements

1. Inappropriate person in inappropriate position
2. Lack of relative sources about specific majors
3. Lack of researches and unawareness of employees about new technology
4. Lack of experts
5. Lack of plans
6. Lack of budget
7. Lack of financial support and needs in performing extension programs
8. Lack of skillful employees in extension field
9. Lack of support by farmers to success extension programs
10. Lack of support and cooperation from extension centers and extension administration to extension programs
11. Lack of knowledge by farmers and illiterately that make them delay in adopting new ideas
12. There is no specific channel to this target
13. The ministry have not professional persons for this aim
14. Lack of programs from the ministry
15. Lack of trust between farmers and employees
16. Lack of resources knowledge about agricultural science by employees
17. Lack of skillful people about extension administration and extension techniques development
18. Lack of strategic plan about agricultural extension development
19. Unconsciousness about new ways of extension in developed countries
20. Lack of support and encouragement from government

Barriers Statements Continued

21. Corruption in administration and heavy beaurocracy between positions in the ministry and administration departments
22. Lack of administrators' knowledge and not acknowledging the knowledge employees
23. Considering political views in administration and ignoring the skillful employees
24. Field work restrictions
25. Not having professional staff to deal with
26. Not having strategic plan
27. Not supporting farmers to stay in their villages and land
28. Modernizing and growing cities. Ignoring villages.
29. Lack of administering's authority
30. Lack of budget
31. Lack of training and knowledge for extension agents
32. Lack of extension means
33. Lack of experts and understanding about extension works
34. Lack of appropriate structure for extension system
35. Lack of sources about how transferring technology to farmers
36. Lack of cooperated plans by multiple stakeholders
37. Lack of budget and delay financial support
38. Lack of cooperative organizations to help with extension program
39. Lack of skillful administrators in extension field
40. Lack of budget for performing extension activities

Barriers Statements Continued

41. Lack of needs for farmers who really stay in their villages and doing agricultural works
42. weakness of media with all its types
43. Lack of markets for farmers products
44. lack of trust between employees and farmers
45. bad transportation (roads) to villages
46. Lack of understanding between extension agents and farmers
47. Lack of research to develop agriculture
48. farmers migration from villages to urban areas
49. dishonesty by administrators and not paying attention to new ideas and skillful people
50. Lack of skills of administrative staff
51. Lack of encouragement from administrative staff
52. Lack of new research by the research centers in the area
53. Lack of consideration to the local agricultural products because of the inappropriate export and import regulation
54. Lack of encouragement and financial support to extension agents who work in public sector
55. Administration corruption
56. Bureaucracy of the administration system
57. Lack of believe about the feasibility of extension process by decision-makers
58. Lack of requirements and needs for change

Barriers Statements Continued

- 59. Not having a production map for the agricultural areas according to the environment and farmers' skill
- 60. Lack of trust between producers and decision-makers
- 61. Allocated budget from the ministry
- 62. Lack of encouragement to extension agents
- 63. Not giving right positions and responsibilities to the right people
- 64. Lack of interest about extension from decision-makers
- 65. Lack of hiring extension agents
- 66. Lack of budget
- 67. Lack of skills and experiences
- 68. The existing nepotism between employees
- 69. Illegal competitive between directors in the ministry
- 70. All the ministry's organizations are controlled by a political partisan agents
- 71. Not acknowledging the new employees' capacity and skills by the ministry
- 72. Weakness of cooperative and administration
- 73. Lack of skills
- 74. Lack of cooperation between universities and agricultural research centers
- 75. Lack of outreach and trainings
- 76. Lack of transportation means for extension agents
- 77. Lack of trust between extension agents and farmers because of lack of useful information for farmers
- 78. Lack of requirements and needs for extension agents to visit farmers and know about their issues

Barriers Statements Continued

- 79. Inability to hold training course, or not on time of which cannot get opportunity to involve farmers
- 80. I have heard that extension agents are work two or three days in a week only.

Needed Improvements Statements from Kurdish Responses

1	2	3	4	5
فه بۆ كشتوكلى خولى ران رمانبه	يېڭىل گېمىن شاندىنى	بوئىت زياتر لاتى سەدە ران نابەر مەفە بە	لە بوئىت زاتر لاتى سەدە كان ناحىيە و زارقە	
بەشپوقىيەك رېنمايەكان جوتياران ئاستى لە بيت بيت	داوا نوى سىستەمىكى بېش ۋەلاتە لە بكريت كەتتو ۋەكان	كەسى جەندىن لايىن لە بېش رېنمايەكان شارەزا بكريت كەش	هەممو رۇزائە ئامادەبن جوتيارەكان	
زياترى ئىداني طرەنلى و ھەزىم ھۆكۈمەتى كشتوكال ۋەزارەتى رېنمايە بېجۋارى كشتوكالى	ھەيكەتلى رېكسىتەتۋەي رېنمايە فەرمانىكەكانى لە ھەزىمى كشتوكالى كوردستان	بەرنامەيەكى دانانى كشتوكالى رېنمايە تايىت طونجاۋو كوردستان بەھزىمى زانستى ئاستى كەلتەتەن رۇشنىرى و و جوتياران بىتونىت كېشەكانيان	تۇلكردنى توندو نىوان ھاۋكاري ۋەزارەتى و زانكۈكان لېجۋارى كشتوكال كشتوكالى رېنمايە	مەنەنە طەراندەتۋەي جوتيارو لېنىۋان رېنمايە كارمەندەكانى كشتوكالى
labrotary	reading agriculture journals	visiting foreign countries		
بەسەر كەردنەمەي لە گوندەكان بەردەمەي پىپۇرانى لايىن دەپنەكەردنى و كشتوكالى بۇيانى داۋىستى				
كەردنى سەر بېرەشتى لە كشتوكالى ئىنداز يارى جووتيار كىلەكى	و جوتيار نىۋان لە مەنەنە كشتوكال ئىنداز يارى	كەرسەتەي ۋەركەتتى لە بېۋىست ۋەزارەت دامودەزكاي جووتيار بۇ	لە زانست بوزانەتۋەي جوتيار كىلەكى	
بوۋنەتۋەي نەزىك لە رېنمايە كارمەندەكانى يەكەنى ضالاكى و كار كشتوكالى تۈزىنەتۋەي	بەتۋادىۋونى كارمەندەكانى بەردەمەي برا لىتەن رېنمايە زانىنى جوتيارەكان كېشەكانيان	كارمەندەكانى ئېۋىستە خۇيان رېنمايە لە بېكەن دەۋلەتەندە زانستى روى كشتوكالى	لە بن ناطا بە ئېۋىستە و كۆمەلەيتەي بۋارى ئابۋورى خەزىنەتۋەزى جوتياران	
ھېنانى نوى تەكنولوزىياشۋازى بېشكەتۋەتۋە لىۋالاتانى بېشخەستى بەمەبەستى و كشتوكالى كەرتى رېزەي زىادەكەردنى بەرھەم	لە بىسپورشارەزا ھېنانى بو بېشكەتۋەتۋە لاتانى بېكەيانەندى و رەھىنان رېنمايە و تۈيزەقەران كاران	كەردنى دابىن كوستەتۋە ھەكارەكانى ھۆكۈمەت لە لايىن		
شۋازى و تەكنىك ھېنانى كەرتى بېشخەستى بو نوى كشتوكالى	خولى كەردەتۋەي لە لايىن رېنمايە بو بېيانى بىسپورانى بېكەيانەندى كاران تۈيزەقەرور رېنمايە	كەردنى دابىن كوستەتۋە ھەكارەكانى ھۆكۈمەت لە لايىن	كونترولە بە دان كەركى جورى	زىاتر ئاسانكارى ناۋەندەكانى لە لايىن تۈيزەقەران بو تۈيزەنەتۋە كاران رېنمايە و

Needed Improvements Statements from Kurdish Responses Continued

krdnaway dawrat bo karmandany kshtwkaly	nardnyan bo daraway wlat bo away asty wlatany jyhan bbynn			
Field work	building relationship between farmers and agriculture staff	having stratigic plan to produce more agriculture product	informing farmers about scientific use of pesticides and its side affects	supporting farmers to stable in their villages and lands
کارگیری هیکلی کورینی خوی به ر سه واته رینمای کردنی ده بیدانی وه کشتوکالی وه کارگیری لاتی سه خو ربه سه زمیریاری	ی بودجه کردنی دابین له وه سالانه بیویست خویدا کاتی	هواره کردنی دابین ک وه کارکردن کانی نو تومبیل	ره رابه بو زیاتر خولی کان کشتوکالیه	له زیاتر نکى هه نام هه ی وه توزینه ل که زانکو وه کشتوکالی کان کشتوکالیه
و ریک هیکلیکی بونی له بورینگیسی ٹیک کورستان هقریمی	لغنیوان تنسیق و رینمایى توزینقو زانکو	ئاستی بقرزکردنقو رینمایى فمرمانبقرانی	کترتی کرنی بی بقشدار لقرینمایى تایبقت	رینمایى بلانی دانانی لککل بههاریش جوتیار
لی یکه هه زرانندی دامه ری وهونه کارگیری کانی رمانکه فه بسپوری وه کشتوکالی رینمایى به ستن به بشت ن خاوه ندانی کارمه بکالوریوس ی بروانامه بوارى نی تایبه به وبالا کشتوکالی رینمایى	F.F.S راهینانی بروکردنی به جوتیاران جوتیاران ی قوتابخانه	کردنی هاوکاری رونکردنه له جوتیاران بو دا کان کیلیه وه کردنی دروست) نمونه روه به یان میوه باخی ر سه له میو کردنی رده ی بوره بیدانی یان ل ته هند نک هه	ری نته سه کردنی زیاد له کشتوکالی رینمایى کانی ناوجه کشت ریمی هه بایزکاکانی کوردستان	خولی ی وه وه کردنه و وه رده له راهینان له وولات ی وه ناوه کارمه بو رزدا به ئاستی بواره کشت له ندان داا کشتوکالی کانی
دانی ننجام کشتوکالی تاقیکردنقو و جوتیاران کیلکته له ننجامی نیشاندانی به تاقیکردنقو تر جوتیارانی	شیوازی بقکارهینانی ویز وتو و جانندن له نوي جوتیاران لککل کردن هوارهکانی ریکای له راکتیانندن	به برۆزقو ننجامدانی کارمه لغنیوان کۆمقل ورئینمایى ستافی و ندان جوتیاران	هویقو کردنقو رینمایى بجوکی زۆربقو له کشتوکالی بو کان کوند زانباری کواستنقو و ندان کارمه لغنیوان ورئینمایى ستافی جوتیاران	کیشقو بقداوی کقران و جوتیاران ریکقو جاره دوزینقو کیشقوکان بو
به کردنیان ئاشنا کشتوکالی نوبی شیوازی خولی ریکته له بیشکقوتوو	لقم بسپور کتسی هینانی جیاجیاکانی بواره راستقو خوکقو کشتوکالی لککل کاریکات ستافی و کارمقدان رینمایى	ننجامة نیشاندانی ریکا سترکقوتووکانی کشتوکال نویکانی		

Barriers Statements from Kurdish Responses Continued

1	2	3	4	5
بۆ ناشیاو سی که ناشیاو شوونی	تتاییه خولی می که کان تییه تاییه بواره له	و ووتی ژینه می که رمانبهفه ناگای بی نوی زانستی له ران		
کسانی کمی شارهزا	بلان نهبوونی	بودجه		
تالشتی کمی و دارایی نیداو یستیه کانی کردنی جیه جی بهرنامه کانی کشتوکالی رینمایی	کارمندی کمی تشتور شارهزاو رینمایی له بواری کشتوکالی	هاوکاری کمی بۆ جووتیارن له لایتن سفر کتوتنی بهرنامه کانی رینمایی	نهبوونی یان کمی و هاوکاری لایته ههماهنگی و دارهکان تهبوندی کارطیری یهکوکانی بهرنامه کانی بۆ کشتوکالی رینمایی	و شارهزایی کمی نهبوینهواری درهت و جووتیاران فکری قبولکردنی نوی
there is no specific channel to this target	the ministry have not professional persons for this aim			
و برۆگرام نهبوونی بهرنامه یی و وزارت	متمانە بی نهبوونی و جووتیار نیوان له موظف	زانستی کمی ئهتدازیاری کشتوکال		
کەسی نهبوونی بواری له شارهزا له طهشهتیدان و ئیداری رووی رینمایی هونتری کشتوکالی	دانانی نهتوانینی ستراتیجی تالانی بۆ خایهت دریز طهشهکردنی کشتوکالی رینمایی	له نهبوونمان بهناطای تیشکوتنی شیوازی بوارهدا له وولاتان		
و هاوکار نهبوونی له لایتن هاندان و وزارت	ئیداری کهندهلی له روتینات وزوری بهربرسانی نیوان و وزارت بهریوبهرایهتی کشتوکالیکان	و نیهتی ههول بوونی له لایتن خراب بهترانی فهران خزمهتی خاوهن ههتر بو زور بهیریکی و بیشکوتن له لایتن نوی کهنجان نوی و فهرانبهترانی	شارهزایی کمی دان و بهربرسان بهتواناو نهتان لیهاتوویی و نوی کارمندان زیرهک	بهیری بوونی زال کسانی و حیزبایهتی بهسهر حیزبی دلسوزو کسانی زانست خه مخوری

Barriers Statements from Kurdish Responses Continued

Field work restrictions	not having proffessional staff to deal with	not having strategic plan	not supporting farmers to stay in their villages and lands	modernizing and growing sites vs. ignoring villages
لاتی سه ده می که کارگیری	بودجه بونی نه	وه کان خوله می که ناستی نزمی ره رابه زانیاری کشتوکالیهکان	کاره هو بونی نه کردن کار کانی	سانی که می که بونی نه وه زا شاره کاری له یشتن تیکه کشتوکالی رینمای
هیکه تلیکی نخبوونی ریکوبیک رینمایی	جاوای سه کهمی بو زانستی کتایاننه جوتیار	بلانی نبوونی که جتن هه مه لایقه به شار بیت لایه نیک ارشتنی له	تاخیر بوجهو کهمی بوونی	لکاری رینمیل نه بوونی کومله لای و جمعیات هه ره وه زی که یار مه تی رینمایی هه ستاکانی ب له بات
بوونی نه زا شاره لئیر سراوی له و بسبور و جالاک رینمایی بواری کشتوکالی	ی بوودجه می که رابه بو ت تاییه کانی کاره راندنی کشتوکالی رینمایی	هاوکاری بوونی نه بو (ومعنوی مادی) تاییه به جوتیاران به که ی وانه نه تی کان کونده له فعلی نه کشتوکالی کاری ن ده نه نجام	یاندن راکه لاواری موو هه به شیوهکانی	به بو بازار بونی نه کانی مه رهه جوتیاران
متمانة نخبوونی ندان کارمه لایه یوان وری نمایی ستافی و جوتیاران	ریکای سهختی بو جو هاتوو کوندهکان	نه که یشتن لایه نیک ندان کارمه لایه یوان وری نمایی ستافی و لایه یوان جوتیاران دایلیکتی و شیواز هه ره دوولا	کهمی یان نخبوونی توو یزینه وه ی و کشتوکالی به ره بو زانیاری بردنی بیش کشتوکال	کردنی کوچ له جوتیاران به ره کوندهکان وه شار
نخبوونی دلسوز به ره بررس کهسانی به جوریک بواری له ی تفکار به کرنکی کهسی و نوبی نادهن لایهاتوو	کارمتهن توانایی کهمی یه رینمایی ستافی و کان	ناستس کهمی رو شنبیری کشتیارهکان	کیانی نخبوونی له لایه یوان هاندان کهرتی به ره برسانی کشتوکالی	

Needed Improvements Statements from Arabic Responses

1	2	3	4	5
تأهيل مركز انشاء الزراعية الكوادر الحديثة بالتكنولوجيا	اعلامي مركز انشاء اهمية على للحث خاص المحلي الزراعي القطاع الفلاحين وتنقيف	تعليمية حلقات افتتاح الفلا و للكوادر وتدريبية حين	المالي الدعم	منظومة هيكلية اعادة الزراعي الارشاد على يعتمد بحيث الحديثة الابحاث
الاداري الهيكل تغيير لمنظومة والتنقيف كوردستان في الرشاد	و المشاكل تحديد القطاع متطلبات الزراعي	مستلزمات توفير العملية لتسهيل المطلوبة الخدمات وتقديم الاسادية	ميداني مسح اجراء العلمي المستوى لمعرفة للفلاحين والمعرفي والمتلقين	كل الحالات دراسة اختيار و حدى على الارشادي البرنامج الملائم
الارشاد وسياسة تخطيط الزراعي	حسب برامج وضع المنطقة احتياج			
جديد اداري هيكل وضع وحديث	منظمة ميزانية تخصيص وكافية	تلائم عمل خطة وضع للارشاد الحالي الواقع	عمل استراتيجي وضع سنوات خمس لمدة	بالمهتمين الاهتمام بالارشاد
الزراعية الدورات الزراعيين للمرشدين	روتينيات من التقليل لوزارة التابعة الدوائر الزراعة	المصادر عن البحث لأجل الحديثة والتقنيات في تطوير الزراعة العراق	النقل الوسائل تأمين الارشاد لموظفي الزراعي	الاجهزة توفير المختبرية والادوات البحوث المراكز في
الزراعية دورات فتح معلومات و خبرة لزيادة الزراعي لكادر	او التقنيات مشاهدة في جديدة التكنولوجيات في الزراعي المجال الى ونقلها المتقدمة دول الفلاحين	نقل عمليات و تسهيل جديدة المعلومات من الفلاحين ومساعدة نواعي كل		
طريق عن التحسين المكثفة البحوث	طريق عن التحسين الى البحوث هذه توصيل طريق عن الواقع الزراعيين المرشدين	اخر الفلاحين تدريب هم الحاصلة تطورات المنفذة البحوث طريقة	الالية في التحسين نوعية مع التعامل ونوعية المنتجات الزراعي ارض	مجال في التحسين البيئة
توجد لا الان لحد الارشاد منظومة اقليم في الزراعي تقدم حتي كوردستان والمعلمين للزبان خدمة	تحويل يجب وجدت اذا كافة الارشادي كادر والامكانيات الصلاحيات الجهد تعطي حتى المادية كل في الفلاحين لزيارة والمشاكل الوقت الموجودة	النقل وسائل توفير يجب للمرشدين والاتصالات التخصصين الزراعيين المشاكل تتعرف حتى الموجودة	منظومة ادماج يجب على الزراعي الارشاد والكلية العالي التعليم تزداد حتى الزراعة تلك وارسال لامعلومات التجارب معلومات للابحاث العلمية والدكتوراه الماجستير الكلية الخارج الى	دورات عمل يجب الدول في التدريبية والمريكية الاوروبية نقل لغرض الجديدة المعلومات المزارعين والى الثقة باب تفتح حتى الارشاد بين والمزارعين
توفير -النقل وسائط لسد الازم العدد للعمل النقل الاحتياجات عالية بكفاءة	اللازمة خدمات توفير الذي للقرى (الكهرباء) لحد الكهرباء تصلها لم الان	لممثلي مجالس انشاء قرية كل في الفلاحين والرؤيا احتياجات لتحديد الى وايصالها المستقبلية المختصة الجهة	المرشدين عد زيادة المختصين الزراعيين لقرى الارشاد لشؤون	

Needed Improvements Statements from Arabic Responses Continued

1	2	3	4	5
الابحاث وجود عدم مراكز قبل من الجديدة المنطقة في البحوث	بالمنتوجات الاهتمام عدم نتيجة المحلية الزراعية و الاستراد قوانين فساد التصدير	العام القطاع تشجيع عدم الناحية من بالكوادر المعنوية و المادية	الاداري الفساد	بين تنسيق وجود عدم العلمي التعليم مراكز الارشادية والدوائر
الوظيفي نظام البيروقراطي	العلية الجهات ايمان عدم العملية بجدوى المنفذة الارشادية	الامكانيات توفير عدم والمعنوية امادية للتغيير المطلوبة	الخارطة وجود عدم تحدد التي الانتاجية حسب الزراعية المناطق خبرة و البيئة نوع الفلاحين	المنتجين بين الثقة قلة الارشاديين والقادة
الوزارة ميزانية	الكادر تشجيع عدم الارشادي			
الاشخاص اختيار عدم حسب بالاعمال والتكليف الكفاءة	اهتمام وجود عدم قبل من بالارشاد القرارات اصحاب	الارشاد توظيف عدم	ميزانية لا يوجد	والخبرات الكفاءات قلة
بين القائمة الواسطة الزراعة موظفي	القانونية الغير المنافسة في الدوائر مدراء بين الزراعة وزارة	الحزبية الكوادر سيطرة مؤسسات كافة على الزراعية الدوائر	بكفاءة الاعتراف عدم الجدد موظفين ومهارات الوزارة قبل من	
والتنسيق الادارة ضعف	الخبرات قلة	الزراعيين المرشدين قلة	بين التعاون عدم والمراكز الجامعات الزراعية البحوث	والتدريب التوعية قلة
النقل وسائل وجود عدم الارشادي كادر لدى	بين الثقة وجود عدم الارشادي الكادر عدم بسبب والفلاحين تفيد المعلومات توفر المزارعين	امكانيات توفر عدم للكادر والمعنوية المادية عدم الى تؤدي الارشادي الفلاحين المفاتيحة المشاكلهم ومعرفة	فتح من تمكن عدم واذا ، التدريبية الدورات عن متاخرة فانها كان عدم اوقات في او وقتها للفلاحين فرص وجود سبب كلها وان بالمشاركة التخصصات توفر دم المالية	بان سامح انب حسب في التعليمي كادر دوامهم الزراعية الفروع من بحيث جدا قليلة يومين او يوم الاسبوع الشهر في او يداومون بعضهم او مرتين او مرة في م

APPENDIX K
INSTITUTIONAL REVIEW BOARD APPROVAL

DIVISION OF RESEARCH

Office of Research Compliance and Biosafety



APPROVAL DATE: 02/11/2013

MEMORANDUM

TO: Jeffrey Ripley
Yousif Khoshnaw
TAMU - College Of Agriculture - Ag Leadership, Education & Communication

FROM: Dr. James Fluckey
Chair
Institutional Review Board

SUBJECT: Initial Review Approval

Protocol Number: IRB2012-0701

Title: A Study to Assess the Willingness of Extension Agents in the Kurdistan Region of Iraq to Adopt the Participatory Approach of Extension Education

Review Type: Expedite

Approved: 02/11/2013

Continuing Review Due: 12/15/2013

Expiration Date: 01/15/2014

Review Categories and Regulatory Determinations: Category 7: Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies

Documentation of Consent: Waiver approved under 45 CFR 46.117 (c) 1 or 2/ 21 CFR 56.109 (c)1

Comments: Since you will be conducting the study in languages other than English, you must submit anything the participant sees in the language in which they will receive it. You must add these documents as amendments prior to carrying out your research.

This research project has been approved. As principal investigator, you assume the following responsibilities

1. **Completion Report:** Upon completion of the research project (including data analysis and final written papers), a Completion Report must be submitted to the IRB Office.
2. **Adverse Events:** Adverse events must be reported to the IRB Office immediately.
3. **Deviations:** Deviations from protocol must be reported to the IRB office immediately.
4. **Amendments:** Changes to the protocol must be requested by submitting an Amendment to the IRB Office for review. The Amendment must be approved by the IRB before being implemented.

This electronic document provides notification of the review results by the Institutional Review Board.

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